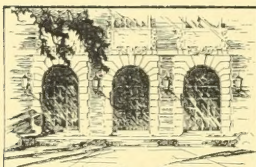




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IVORY-BILLED WOODPECKER.
(*Campephilus principalis*).
 $\frac{1}{2}$ Life-size.

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NATURE NEIGHBORS

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VOL. III—BIRDS

AMERICAN AUDUBON ASSOCIATION
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Birds

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CHAPTER X

BIRDS OF PREY

VULTURES live on carrion, and have naked heads and feet, the better to enable them to act as scavengers. Except in nesting season, they are usually found in flocks, returning to the same roosting-place regularly. Strong fliers, they often sail majestically for minutes without an apparent wing stroke.

They have no note except in case of alarm. In America the range is less northerly than formerly, because dead animals are now disposed of or buried, where they formerly remained on the surface to decay. In the South they are protected by law and public sentiment. The sense of smell is keen, but sense of sight is especially so.

Falcons, Hawks, and Eagles are distributed throughout the world, and about thirty species are found in North America. During the migrating season they often travel in flocks; at other times, with few exceptions, they are solitary or found in pairs, the female being slightly the larger. At all times these strong fliers are on the alert for food, which consists largely of small animals, insects, and birds. They have telescopic eyes and a remarkable vision. The members of this family have strong talons, for capturing and holding prey, and strong hooked beaks, for tearing flesh; they pos-

sess a stomach instead of a crop. They do not swallow feathers and bones, as do owls.

Barn owls are similar to other owls in habits and structure, but constitute a different family. Owls are found in all parts of the world, about twenty inhabiting North America. They resemble hawks in beaks, in talons, and in carnivorous habits, but have eyes directed forward. The eyes are fixed in sockets, so that the entire head must be moved to change the center of vision. This gives them a droll, wise look, which makes the owl an emblem of wisdom. The prey is seized with the talons and swallowed whole, hair, feathers, and bones, and the indigestible parts are later expelled through the mouth in the form of pellets. A peculiarity of the foot is that the outer toe is reversible. Owls, except those ranging far north, are nocturnal, while hawks are diurnal. The cry of the owl is so weird as to create a superstitious dread. The eggs are uniformly white and unmarked. The plumage is long and loose, so that the flight is noiseless. Owls feed largely on destructive rodents; little poultry or few useful birds are destroyed by any except the horned owl. Owls are, therefore, of even greater economic value than the hawks.

THE CALIFORNIA VULTURE*

Dr. Brewer states that the single species composing this very distinct genus belongs to western North America, and, so far as known, has the most restricted distribution of all the large raptorial birds in the world. It is found on the coast ranges of southern California from Monterey Bay



CALIFORNIA CONDOR.
Gymnogyps californianus.

Illustration by J. A. Rehn.

southward into Lower California. It associates with the turkey buzzard, and the habits of both species are alike, and they often feed together on the same carcass.

The vulture's flight is easy, graceful, and majestic. A writer who watched one of these gigantic birds thus pictures it: "High in air an aeronaut had launched itself—the California condor. Not a wing or feather moved, but, resting on the wind, like a kite, the great bird, almost if not quite the equal of its Andean cousin, soared in great circles, ever lifted by the wind, and rising higher and higher into the empyrean."

The weight of the vulture is sometimes twenty-five pounds, requiring immense wings—eight and a half to eleven feet from tip to tip—to support it.

Mr. H. R. Taylor says there have probably been but three or four eggs of the California vulture taken, of which he has one. The egg was taken in May, 1889, in the Santa Lucia Mountains, San Luis Obispo County, California, at an altitude of 3,480 feet. It was deposited in a large cave in the side of a perpendicular bluff, which the collector entered by means of a long rope from above. The bird was on the nest, which was in a low place in the rock, and which was, the collector says, lined with feathers plucked from her own body. This assertion, however, Mr. Taylor says, may be an unwarranted conclusion. From the facts at hand, it appears that the California condor lays but a single egg.

The condor is not an easy bird to capture, for it has a fierce temper and a powerful beak. One was recently captured in California by means of a lasso.

TURKEY VULTURE

The Turkey Vulture ranges throughout temperate North America, as far north as southern Minnesota and New York, wintering in the Southern States.

Vultures, like our gulls, are scavengers, but the former subsist chiefly on carrion and rarely attack living creatures. The nostrils are highly developed and the sense of smell is extremely keen, while the sense of sight is even more highly developed.

Vultures have the head and neck bare of feathers, and they are really repulsive-looking at near sight, though distant flight is graceful. Our American vultures are capable of prolonged flight without any apparent movement of the wings. This seems like a violation of the laws of gravity, but in their majestic soaring I have watched them ascending or descending, while moving in great circles, without once flapping the wings. The birds are much more numerous in the South from Florida and South Carolina west to New Mexico.

They are protected in all the Southern States, and it is not an unusual sight to see small groups of both turkey and black vultures feeding in the public streets, where they exhibit no more fear than our domesticated pigeons. Dr. George F. Gaumer, of Central America, informs us that the killing in immense numbers of certain herons, gulls, and other scavengers has resulted in an increase of human mortality among the inhabitants of the coast. This tends to show how certain birds assist in keeping the beaches and public highways free from decaying animal matter.





BLACK VULTURE.
(*Catharista atrata*).
 $\frac{1}{2}$ Life size.

Many farmers claim that hog cholera and other animal diseases are carried by these scavengers, so they are inclined to kill them. In the North dead animals are now generally burned or buried, so that these birds do not now range so far north as formerly.

The turkey vulture is not an uncommon summer resident in Ohio, Indiana, and Illinois. It is found along the Illinois River, in the vicinity of Starved Rock. According to the latitude, one or usually two eggs are laid from March to June. Small cavities or crevices in the rocks, hollow logs, and hollows in trees are used as nesting sites. Practically no nest is constructed. The eggs, deposited on the bare rocks or leaves, are white or greenish-white, blotched and splashed with shades of purple and red.

THE AMERICAN VULTURES *

Of the eight species of American Vultures, the Black Vulture and the Turkey Buzzard are the best known. They frequent both North and South America, the black species ranging from North Carolina and the lower Ohio Valley westward to the great plains and southward through Mexico and Central America into South America, where it is found in nearly all parts. The range of the turkey buzzard is more extensive, for it extends from New Jersey, the Ohio Valley, the Saskatchewan region, and British Columbia southward to Patagonia. It is only as scavengers that these birds find their true place. "They have the beauty of utility, if no other, and their usefulness is recognized in all warm countries, where they are encouraged in their famil-

ilarity with man and are rightly regarded as public benefactors."

The black vulture, which we illustrate, is not as graceful a bird when flying as is the turkey buzzard. The flight of the latter birds is "exceedingly easy and graceful, while the apparent absence of all effort, as they sail in stately manner overhead, in ever-changing circles, and without any apparent movement of their well-shaped wings, makes them really attractive objects to watch." The flight of the black vulture is much more heavy and laborious and is accomplished by frequent flapping of the wings. It is a stronger and heavier bird than the buzzard, and when the two dispute over food it is invariably the victor.

It is said that in many southern cities the black vultures may be seen in numbers "walking the streets with all the familiarity of domestic fowls, examining the channels and accumulations of filth in order to glean the offal or animal matter of any kind which may happen to be thrown out."

The black vultures are gregarious and frequently breed in small communities. They make no attempt to build a home, but lay their eggs upon the ground in slight depressions, which are lined only by the vegetation which has naturally fallen on the spot.

SWALLOW-TAILED KITE

The wing development of the Swallow-tailed Kite and the Everglade kite is remarkable. Like the frigate bird and swifts, the wings extend far beyond the tail. The Mississippi and white-tailed kites, the two other American forms, have less wing development, and their flight is more



SWALLOW-TAILED KITE
Life-size.

suggestive of the ordinary falcon. The swallow-tailed kite was formerly found as far west as the great plains and northward to southern Canada. They winter in Central and South America. Always of local distribution, their range is becoming even more restricted.

The food of this hawk consists largely of insects, hence it is beneficial; it also eats small reptiles. It captures its food, devours it, and drinks while on the wing. Kites migrate in flocks. In the last twenty years several migrating flocks have passed through the Great Lakes region near Chicago in spring and fall. This would indicate that the birds were either on an extensive hunting expedition or resorted to some remote section of the country to breed. However, little material is available regarding their habits, aside from that furnished by Florida and Texas ornithologists.

During the last fifteen years these birds have been found breeding in Texas and the isolated pine regions of Florida, being about the only sections still inhabited with any certainty by this fleet-winged raptor. In Florida the nests are placed in the tops of the tallest cylindrical pines, usually in wet portions of the state where the nests are accessible only during dry seasons. In several scientific expeditions undertaken to procure the nest and eggs of this species it was found necessary to kill the male kite before ascending the tree to the nest, as the bird boldly darted at the head of the collector, dislodging his headpiece and striking him with its talons until several deep wounds were inflicted.

The nests are constructed of stems, sticks, and a little bark. Two or three eggs are deposited in April or May.

THE EVERGLADE KITE *

The Everglade Kite, or Snail Hawk, as it is sometimes called, has a very small range within the borders of the United States, where it is limited to the swamps and marshes of southern Florida. It also frequents eastern Mexico, Central America, Cuba, and the eastern portion of South America as far southward as the Argentine Republic.

Its habits are very interesting. Peaceable and sociable at all times, other birds do not fear them.

An authority, writing of these birds in Florida, says: "Their favorite nesting sites are swamps overgrown with low willow bushes, the nests usually being placed about four feet from the ground. They frequent the borders of open ponds and feed their young entirely on snails. According to my observations, the female does not assist in the building of the nest. I have watched these birds for hours. She sits in the immediate vicinity of the nest and watches while the male builds it. The male will bring a few twigs and alternate this work at the same time by supplying his mate with snails until the structure is completed. They feed and care for their young longer than any other birds I know of, until you can scarcely distinguish them from the adults."

The nest is a flat structure, the cavity being rarely more than two or three inches in depth, and the whole structure is about twelve or sixteen inches in diameter and about one-half as high. It is usually placed in low shrubs or fastened to the rank growth of saw grass, sufficiently low to be secure from observation. The materials used in its con-



EVERGLADE F.



MARSH HAWK

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struction are generally dry twigs and sticks loosely woven together. The cavity may be bare or lined with small vines, leaves, or dry saw grass.

"Its food, as far as known, consists exclusively of freshwater univalve mollusks, which it finds among the water plants at the edges of shallow lakes and rivers or the overflowed portions of the Everglades."

MARSH HAWK

The Marsh Hawk, or Marsh Harrier, as this species is frequently called, ranges throughout North America and south to Panama, frequenting open stretches. In none of our hawks or falcons do the sexes exhibit a greater difference in plumage than in this species. The female is slightly larger than her mate, and her feathers are dark brown margined with several lighter shades. The male is light pearly gray, with bright yellow feet and legs. The unerring field mark is a white patch on rump. The legs are exceptionally long and the wings are broad, enabling the birds to fly up and down our water-courses in a manner more in keeping with that of a tern or gull.

The food consists largely of mice, small reptiles, and large insects. The birds are comparatively harmless to both the farmer and poultryman, and they are among our most valuable birds of prey.

During the mating season, in May, the males perform evolutions in the air, turning somersaults, accompanied with screeching.

In both dry and wet places, dead rushes, grass, and a

few sticks are arranged in a circular nest, and the parent deposits four to six bluish-white eggs, which are sometimes faintly marked with light brown.

The males become pugnacious when the intruder approaches the nesting site, in order to monopolize his attention, while the female quietly leaves the nest from the opposite direction. A small clump of willows or second-growth overlooking a stream are favorite nesting sites.

"Of 124 stomachs examined, 7 contained poultry or game birds; 34, other birds; 57, mice; 22, other mammals; 14, insects." (Fisher.)

SHARP-SHINNED HAWK

The Sharp-shinned Hawk is the most daring of our small raptors. We should all have just cause to fear the eagles if they displayed as much savagery in proportion to their size as does this little falcon.

The birds range from the Atlantic Coast westward to the plains, but are more common in the heavily timbered sections of the Northern States and the southern portions of Ontario, Quebec, Nova Scotia, and New Brunswick. They are partial to groves of coniferous trees, hemlocks bordering a little stream, or tamarack swamps.

When Mr. Richards, the eminent Connecticut ornithologist, attempted to take a nest, the sharp-shin attacked him with such vigor as to drive him to the ground for his dislodged hat. Sharp-shinned hawks have been known to dash against window-panes in an effort to capture canaries. One exciting chase took place between a sharp-shin and a domestic pigeon which sought the shelter of a barn. The pursued





AMERICAN GOSHAWK
(*Accipiter atricapillus*)
J. J. DILLON

C. F. MORTIMER, BY A. W. M. COLEMAN, 1922

reached the barn in safety and flew directly through a crevice under the eaves. The pigeon knew its goal, but the sharp-shin struck the side of the barn with fatal force.

Many of our song birds and domestic fowl are killed by this hawk. They are harmful to all birds, and every gunner is justified in shooting this or any other accipiter on sight. The female, as usual with hawks, is slightly larger than the male. When breeding the birds are so retiring that one rarely suspects their presence unless he examines the woodland closely.

Mr. Richards tells me that these birds still exist in some numbers about Norwich. Many of the nests he has found forty to sixty feet above the ground in the highest coniferous trees, bordering rocky gullies or trout brooks. About a fifth of the nests found were placed in deciduous trees, usually in a large crotch; sometimes an old crow's nest is fitted up and used. Sticks, roots, and bark enter into the composition of the nests, which are large in diameter but comparatively shallow. Three to five extremely handsome eggs are laid.

"Of 159 stomachs examined, 6 contained poultry or game birds; 99, other birds; 6, mice; 5, insects, and 52 were empty." (Fisher.)

GOSHAWK

The Goshawk and the Western Goshawk are inhabitants of the cooler portions of America. The former is found from the Atlantic west to the plains. The general size of this handsome raptor is about that of our red-shouldered or red-tailed hawk, but in disposition it is as savage as the

sharp-shinned hawk. During severe weather goshawks visit the United States, sometimes reaching the Gulf States. The majority of them breed north of the United States, although they are occasionally met with in the Allegheny Mountains and in the northern portions of Michigan. Goshawks are frequently reported from the New England States in small flocks, ranging from six to a dozen in number.

Mr. Charles Richards, of Connecticut, tells me these birds are great enemies of the ruffed grouse. He recalls the experience of his hunting companion, who flushed a grouse and before the sportsman could shoot a goshawk struck the grouse in midair, descending with it to the ground one hundred yards ahead of the hunter. Before the sportsman could kill the hawk it had torn the flesh from half the breast.

Goshawks frequently visit the barnyards to raid the dovecotes and poultry yards. On a New England farm a goshawk attacked a flock of chickens, which rushed through the rear door of the farmhouse into the kitchen, followed by the hawk. It attacked one of the hens, when the farmer felled the bird with his walking stick. This bird, like the accipiters, should be shot at sight.

The goshawk nests usually in coniferous trees, placing their nests of sticks, twigs, and weeds, lined with bark and moss, well towards the top of a hemlock or pine. Two or three pale bluish-white eggs are laid.

"Of 28 stomachs examined, 9 contained poultry or game birds; 2, other birds; 10, mammals; 3, insects, and 8 were empty." (Fisher.)



RED-TAILED HAWK
Buteo lineatus

RED-TAILED HAWK

The Red-tailed Hawk inhabits the entire North American continent, but ornithologists have divided the species into several forms. The Pacific Coast representative is called the western red-tailed, while the bird inhabiting the great plains, northward into Canada, is known as Krider's hawk.

In eastern North America the red-tailed is one of our best-known raptors. In many sections of the middle United States it is resident the year around, not being averse to cold weather if food is plentiful.

The broad-square tail, with upper tail coverts a bright rufous, may be seen when the birds are soaring far above the treetops. Like the broad-winged hawk, the red-tail's call note is a whistle, though the birds are not noisy, like the red-shouldered hawk. He is the largest of the common hawks and one of the most beneficial, deserving full protection, as he preys upon rats, squirrels, and other small rodents and reptiles. Occasionally one may take a bird, but the benefit to the agriculturist far exceeds any havoc which these birds cause to poultry or other birds. The name "hen hawk," or chicken hawk, frequently applied to this bird, is entirely unjust.

The nests are built late in March or early in April. The largest trees in the upland timber appeal to the birds as suitable nesting sites. An immense nest of twigs, sod, and hay, with a lining of smaller twigs, is constructed, usually in a crotch near the main trunk or on one of the largest

limbs of the tree. Some nests are as inaccessible as those of the eagle.

Two to four eggs are laid, usually three. The background is white or pale greenish-white, and the markings appear in the form of spots and blotches of brown and lilac. The young do not leave the nest until they are between two and three months of age.

"Of 552 stomachs examined, 54 contained poultry or game birds; 51, other birds; 278, mice; 131, other mammals; 47, insects." (Fisher.)

AMERICAN ROUGH-LEGGED AND RED-TAILED HAWKS

The hawks of our illustration are natives of North America ranging from Mexico northward. The American Rough-legged Hawk is a geographical variety of a rough-legged form that is found in northern Europe and Asia. It is also known by the names of Black Rough-legged and Black Hawk.

This hawk is one of the largest and most attractive of all the species of North America.

In spite of its large size and apparent strength, it does not exhibit the spirit that is so characteristic of the falcons. It preys almost entirely on field mice and other rodents, frogs, and, probably, at times and in certain localities, upon insects, especially the grasshoppers. It is said that they will feed upon lizards, snakes, and toads.

The eggs of this species vary from two to five and are usually somewhat blotched or irregularly marked with chocolate brown on a dull white background



YOUNG RED-TAILED HAWK HOLDING A QUAIL.

Bubo virginianus

AMERICAN ROUGH-LEGGED HAWK

(*Archibuteo lagopus sancti-johannis*)

Adult & Young.



WESTERN RED-TAILED HAWK.
(*Buteo borealis calurus*).
 $\frac{2}{3}$ Life-size.

Sir John Richardson says: "In the softness and fullness of its plumage, its feathered legs, and its habits, this bird bears some resemblance to the owl."

The Red-tailed Hawk of our illustration is young and shows the plumage of the immature form.

This species may be called our winter hawk, and for this reason the name *borealis* is most appropriate. It seldom visits a barnyard, but will occasionally catch a fowl that has strayed away from the protection of buildings. Its food consists to a great extent of meadow and other species of mice, rabbits, and other rodents. The remains of toads, frogs, and snakes have also been found in its stomach.

During the summer months it retires to the forests to breed, where it builds a large and bulky though shallow nest in trees, often at a height of from fifty to seventy-five feet from the ground. The nest is constructed of sticks and small twigs and lined with grass, moss, feathers, or other soft materials. The number of eggs is usually three, though there may be two or four. They are a little over two inches long and less than two inches in diameter. They are dull whitish in color and usually somewhat marked with various shades of brown.

SETH MINDWELL.

THE WESTERN RED-TAILED HAWK *

The Western Red-tail is but a darker variety of the red-tailed hawk so common in the eastern portion of North America, where it is commonly called "Hen Hawk." The western form has a long and narrow range covering that part of North America between the Rocky Mountains and

the Pacific Ocean and passing southward into Mexico. As a casual visitor it has also been observed east of mountain system. It is only a summer resident in the northern part of its range. It is one of the earliest of the migrating birds to return to its nesting localities in the spring and one of the last to wend its way southward in the fall.

Its call notes are very similar to those of the common red-tail and consist of "shrill squeals, uttered during the greater part of the day while circling high in the air."

Though its nest is sometimes placed very near the ground, it usually builds at a height of from twenty-five to fifty feet, and nests have been observed in the tops of gigantic redwood and pine trees that were not less than one hundred feet above the base of the tree. Several species of trees are acceptable to this hawk as a place for its home, and it has also been known to build its nest in a species of gigantic cactus. When suitable trees are not to be found, the western red-tail is equal to the emergency and will occasionally be satisfied with a cliff or the "sides of a perpendicular bluff" upon which to construct its home.

Though this species does occasionally attack poultry and other birds, the name "hen hawk" should never be applied to it. The number of domestic fowls and wild birds that it destroys is very small when compared with the large number of the noxious smaller mammals and grasshoppers which it kills. When grasshoppers are common they form this hawk's chief article of diet during the months of late summer and early autumn. The western red-tail is a friend to the agriculturist, and is a worthy object of his appreciation and protection.



RED-SHOULDERED HAWK
1

THE FIELD AND GARDEN

RED-SHOULDERED HAWK

The Red-shouldered Hawk, often miscalled Chicken Hawk or Hen Hawk, is probably the commonest raptor in the eastern United States. The note is different from that of our other hawks, being the one the bluejay enjoys mimicking so well, thereby having a little fun at the expense of the other birds. It is larger than any other common hawk except the red-tail. The red-shouldered hawk is partly migratory, arriving in the Middle States and Great Lakes region late in March. Its range is eastern North America, north to Nova Scotia and Manitoba; resident almost throughout the range. The principal food consists of small rodents, snakes, sometimes a bird, but seldom a chicken, so it is decidedly a benefit to the farmer, because of its destruction of mice and ground squirrels.

The birds are partial to a given locality, returning year after year to the same piece of woods, and laying a second or third set of eggs if robbed of the previous set. Like most hawks, the plumage of the two sexes does not differ, but the female is slightly larger than the male.

The nest, a bulky affair, usually placed in the crotch of a large tree along river bottoms or isolated groves, is constructed of twigs, sticks, and chunks of sod, lined with bark and leaves. The two to five eggs, usually three or four, exhibit great variation in color and style of marking.

"Of the 220 stomachs examined, 3 contained poultry; 12, other birds; 102, mice; 40, other mammals; 20, reptiles; 39, batrachians; 92, insects, 16, spiders." (Fisher.)

BROAD-WINGED HAWK

This well-behaved raptor occurs in heavily timbered sections north of the Ohio River, from the Atlantic to the tier of States west of the Mississippi, north through Minnesota, Wisconsin, and the Great Lakes region. Their retiring habits make these birds less conspicuous than many of our large hawks. Their unsuspicious nature allows them to be approached and killed by ignorant hunters who do not know their usefulness.

The adult birds are handsomely marked on the underparts with various shades of fawn and brown. The feathers are edged with white. Immature birds do not have the underparts barred, but the breast and sides are streaked with dark chestnut. Their note is a long-drawn-out whistle, often heard when the bird is concealed among the treetops.

A rather slow-flying hawk, feeding largely on insects, rodents, reptiles, and rarely on birds, they are decidedly useful, and deserve full protection.

When disturbed on their nests, they fly to a distant tree and show very little alarm or anger. The nests are usually situated close to the tree trunks, twenty-five to fifty feet above the ground, preferably in trees situated in deep woods where the foliage is dense. The nests are of sticks and bark lined with green leaves, a peculiarity of this hawk. Two and three eggs are laid in May, about thirty days later than other hawks assume the same duties. The eggs have a light bluish-white background, and are absolutely clouded with shades of light brown and lavender.



BROAD-WINGED HAWK.
(*Buteo latissimus*)

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FERRUGINOUS ROUGH-LEGGED HAWK

(*Archibuteo ferrugineus*)

About 1½ Lite-size

"Of 65 stomachs examined, 2 contained small birds; 15, mice; 13, other mammals; 30, insects." (Fisher.)

THE FERRUGINOUS ROUGH-LEGGED HAWK*

The pose of the larger hawks as they perch upon the bare limb of a large tree is wonderfully beautiful. Not less attractive is their flight as they gracefully sail high in the air or move forward by measured strokes of their strong wings. The graceful movements of these birds seem all the more interesting now that it is known that nearly all the hawks are a positive benefit to mankind. Especially is this true of the one we illustrate. It is the Ferruginous Rough-leg of western North America. Its range extends from the Saskatchewan southward into northern Mexico, and from the Pacific Coast eastward across the Great Plains and in the South to Texas.

This large and handsome hawk is an inhabitant of the prairie country west of the Mississippi River, where it finds an abundant supply of the smaller rodents which form its chief article of diet. In fact, it feeds to such an extent on the ground squirrels that in many localities it is called the Squirrel Hawk. To a limited extent it also feeds upon grasshoppers and other insects, but never attacks birds.

"The nest is usually built in a tree at no great distance above the ground, but when trees are not available it is placed on the shelves of some of the earth cliffs which abound in certain parts of the West. Like that of the other large hawks, it is composed of good-sized sticks and coarse herbage of one kind or another, and is lined with

softer material than the bulk of the structure is composed of. When such things existed on the plains, the ribs and smaller bones of the buffalo were used in the construction of the nest, often forming a large part of it. The eggs, which are usually three or four in number, are deposited in May, and by the middle of July the young are ready to leave the nest."

When in flight or at rest, it is readily distinguished from the more common American rough-legged hawk by the pure white of the plumage on the underside of the body.

GOLDEN EAGLE

The legs of this great bird are densely feathered down to the base of the toes, distinguishing it from our bald eagle. The Golden Eagles are occasionally recorded during the winter months in the Great Lakes region. Like the snowy owl and raven, they appear in the central United States only when the earth is covered with snow. At this time of the year food is scarce, and formerly many fell victims of the trappers while stealing bait.

Golden eagles are common winter residents in the foothills of Nebraska and South Dakota, where they feed on jack-rabbits and also smaller rodents. They are useful birds, though they do destroy some birds and game. Generally speaking, these birds are silent. When the nesting site is approached, the golden eagle retreats without protest and remains at a safe distance until the trespasser has departed.

Mountainous regions are most frequented by golden



GOLDEN EAGLE.
(*Aquila chrysaetos*)
1. Life-size.

eagles, although the nests are often placed not to exceed fifty feet above the ground, in the crotch of a large tree standing in a remote cañon. The immense nests are constructed of sticks, sod, and coarse grass. Two or three white eggs, splashed and blotched with lilac, pale brown, and chestnut, are laid in February and March. The younger birds appear to deposit the largest eggs. The period of incubation is between four and five weeks, and the young do not leave the nest until they are nearly one hundred days old. The female eagle performs the duties of incubation, and is supplied with food by her mate. Golden eagles remain paired for life, and often attain the age of seventy to one hundred years.

BALD EAGLE

It is true that most mountainous regions are inhabited by eagles, but the birds also live in the flat sections where the country may be sparsely settled.

Bald Eagles range from the Atlantic to the Pacific, south to the Gulf, and northward to the Arctic Circle, breeding practically throughout their range. Naturally, species which inhabit the more rigorous sections of our continent are the hardiest birds, and on examination the eagles captured from the Great Lakes region north to Alaska are found to average several inches longer than those of the South, called, respectively, Northern Bald Eagle and Bald Eagle. Several pairs of bald eagles still roam over the northern portions of Indiana and Illinois along the Kankakee and Illinois rivers. The white plumage on the head

is not acquired until the bird has attained the age of three or four years. The birds remain paired for life.

The eagles which sometimes wander from their regular habitats and cause excitement in districts where seldom seen are generally immature birds, foraging about the country. The stories that they attack and carry off infants are untrue, as in many ways the bird lacks the courage and dash of the smaller raptors.

Along the seacoasts the eagle frequently becomes a parasite, living upon the fish which the osprey captures; while some subsist mainly on dead fish cast up by the waves, though in winter they feed extensively on waterfowl. This bird has been selected as our national emblem. "Old Abe," the war eagle carried through the Civil War by the Eighth Wisconsin Regiment, is the most noted bird of history. The flight of the eagle is strong and rapid; it appears most majestic when soaring in great circles high in air, while uttering the noted piercing scream.

The bald eagles are common in Florida, where they begin nesting late in November, household duties claiming their attention for many weeks. Their nests are massive structures, sometimes a result of many years' accumulation, since the birds annually add to the structure until some nests are five feet in depth and as many feet across. Sticks, corn husks, hay, and sod are used in the aerie, which is slightly hollowed. Often the structure is situated in the upright crotch of a large dead tree, near the top. Only two or three pure white globular eggs are laid.

The longevity of the eagle is very great, from eighty to one hundred sixty years.



AMERICAN SHARP-SHOOTER

SPARROW-HAWK

The Sparrow-hawk, often called "Killy Hawk," from its call, "killy-killy-killy-killy," is the commonest and smallest of our hawks. It lives largely upon insects, such as grasshoppers, crickets, beetles, and caterpillars. The call of this little falcon is much more alarming than his presence, while some of our savage raptors are comparatively silent birds. The sparrow-hawk is found throughout the entire American continent, but the form inhabiting the regions west of Kansas and Dakota is known as the desert sparrow-hawk. The birds prefer an elevated perch for a lookout, and also have the habit of hovering almost motionless in midair, then suddenly swooping down to the ground to capture an insect or a mouse. From this habit comes the name mouse hawk, a name more often applied to the shrike.

The natural nesting site is a hollow tree, preferably near water. Sometimes the birds take possession of an excavation originally chiseled by a woodpecker, and again a natural cavity is utilized. In the Yellowstone Park region of Montana, the Western sparrow-hawk frequently takes possession of a magpie's nest. In Ohio these birds have been found nesting in the crevices of stone quarries. Sometimes they lay their eggs on the sawdust between the partitions in an icehouse, usually just beneath the eaves.

Four or five eggs are laid, usually in May. The background is white and the shell is delicately clouded and spotted with pale brown or salmon.

“Of 320 stomachs examined, 1 contained a game bird; 53, other birds; 12, mammals; 12, reptiles or batrachians; 215, insects; 29, spiders; and 29, empty.” (Fisher.)

OSPREY

This is the famous Fish Hawk, inhabiting the entire United States, but common only in certain sections near large bodies of water. Fish hawks are common along the Atlantic Coast, especially in Georgia, and from New York north to the St. Lawrence River. On the Pacific Coast they are familiar objects on the islands opposite California. Distinctly fish-eating birds, water is an essential environment. They also exhibit a preference for ocean exposure, no doubt because fishing is easier. Silently and rapidly they move over the water at a height of about forty feet, until some member of the finny tribe is discerned close to the surface. Instantly the great wings are closed, and the osprey plunges head foremost into the depths, often completely disappearing from view. In a second he arises with a fish in his talons, and with a scream of triumph flies to his nest or some favorite log or limb, which is used as a lunch counter.

You or I may not be the only witness to this performance. The bald eagle, from his elevated perch, has intently watched the proceedings, and his time to participate now presents itself. Immediately he starts in pursuit of the fish hawk, and the latter, terrified at the onrushing bird of greater size, drops his catch to lighten his weight, thus facilitating his escape. No sooner does the fish leave the osprey's



AMERICAN OSPREY
Pandion haliaetus
Linnæus



AMERICAN BARN OWL.

J. J. Audubon.

claws than the eagle plunges downward, grasping the prize before it reaches the water.

Along the shores of the Great Lakes this bird frequently spends the summer. The Indians regard it as a bird of omen.

As the waters gradually freeze, this bird moves southward, wintering along the Gulf, and sometimes in the West Indies.

The nest of the osprey is a huge structure. The birds select various nesting sites—trees, rocky cliffs, or the bare ground. When the nests are placed in low situations, the birds select an isolated island or a point of land jutting out into the water. Sometimes an old shack or shanty looks inviting to the fish hawk, and he constructs his nest of sticks, cornstalks, roots, and hay on the roof. The same nest is used year after year, and the birds accumulate fresh material each season until the nests are sometimes five feet deep and as many feet in diameter. The two to four, usually three, eggs vary greatly in coloration. The background may be light yellow, light or dark brown, and the markings are in form of spots and cloudings of different shades of red and brown. The eggs appear oily and usually have a decidedly fishy odor.

BARN OWL

The Barn Owl, or Monkey-faced Owl, is distributed throughout the United States, Mexico, and northern West Indies. The birds are more numerous south of the Ohio River, and are also common along the Pacific Coast in

California. They are known locally as "White Owls," and frequent the bottom lands adjoining the Scioto River, breeding most commonly in the large sycamores which line that stream.

Mr. Dawson, in his book, "Birds of Ohio," writes:

"Some idea of the bird's usefulness in the community is conveyed by the 'pellets' or little spheres of indigestible matter ejected by the owl from time to time. I examined many of them, and found them made up entirely of the hair and bones of the smaller rodents, mostly mice. There must have been the debris of several thousand mice and rats." Captain Bendire is certain that the captures of a single pair of barn owls, during the nesting season, exceed those of a dozen cats for the same period.

The barn owl, as its name indicates, often passes the day in barns or outbuildings, being drawn thither solely by the abundance of mice. It offers no violence to the poultry, not even to the pigeons which often share its quarters. When disturbed during its slumbers it makes a hissing noise, or clicks its mandibles in a threatening way. It has, besides a "peevish scream" and some querulous notes. Its very odd appearance arouses interest in the average farmer's boy, who discovers in him a curiosity, which is too seldom satisfied until this best mouser is killed.

Of the breeding habits, Capt. Charles Bendire says: "The barn owl, strictly speaking, makes no nest. If occupying a natural cavity of a tree, the eggs are placed on the rubbish that may have accumulated on the bottom; if in a bank, they are laid on the bare ground and among the pellets of fur and small bones ejected by the parents. Fre-



SHORT-EARED OWL

Asio accipitrinus
♂ Life size.

ILLUSTRATED BY A. W. MERRILL, M.D.

quently quite a lot of such material is found in their burrows, the eggs lying on and among this refuse. Incubation usually commences with the first eggs laid, and lasts about three weeks. The five to nine eggs are almost invariably found in different stages of development, and young may be found in the same nest with fresh eggs. Both sexes assist in incubation, and the pair may sometimes be found sitting side by side, each brooding a portion of the eggs."

SHORT-EARED OWL

The Short-eared Owl, or Prairie Owl, is common to both the Eastern and Western continents, inhabiting the United States from the Atlantic to the Pacific.

This owl is less nocturnal than others, excepting the snowy and hawk owls; as the two latter species are inhabitants of open territory and range north, they naturally have little opportunity to escape the daylight during the summer months. Like the marsh hawk, it destroys great numbers of mice, meadow moles, and other injurious rodents. Many fall a victim to gunners who are so ignorant and cruel as to shoot anything that comes within range. Despite the bird's size, the flight is noiseless.

Five to eight pure white eggs are deposited on the ground, usually at the base of a clump of grass. The eggs are laid early, usually before the verdure appears. It is remarkable how these birds can successfully hatch their eggs and rear their young on the bleak prairies of Minnesota and Dakota in April, when the only shelter is a tussock of dead grass.

When the young have hatched, the old become very uneasy about the nest at the approach of a stranger, circling about, and alighting in the grass a short distance away, while continually uttering an alarm note which sounds like the whine of a puppy.

THE GREAT GRAY OWL*

The Great Gray or Cinereous Owl is the largest of the American owls. The appearance of great size, however, is due to its thick and fluffy plumage. Its body is very small, being only slightly larger than those of the barred or hoot owl. The eggs are also said to be small, when compared with the size of the bird.

The range of this handsome owl is practically confined to the most northern regions of North America, where it breeds from the latitude of Hudson Bay northward as far as forests extend. In the winter it is more or less migratory, the distance that it travels southward seeming to depend solely on the severity of the season. It has been captured in several of the northern United States, from the Atlantic to the Pacific oceans.

It is crepuscular or slightly nocturnal in the southern parts of its range, but in the high North it pursues its prey in the daytime. In the latter region, where the sun never passes below the horizon in summer, it is undoubtedly necessity and not choice that prompts it to be abroad in the daylight. Its yellow eyes are very small, and would indicate day-hunting proclivities.

Dr. A. K. Fisher states that its "food seems to consist



GREAT GRAY OWL
(*Scotia aptex cinerea*).
1/4 Life-size.



SAW-WHET OWL

principally of hares, mice, and others of the smaller mammals, as well as small birds." Dr. W. D. Dall has taken "no less than thirteen skulls and other remains of red-poll linnets from the crop of a single bird." Specimens in captivity are reported to have relished a diet of fish.

Its nest is described as a coarse structure built in the taller trees and composed of twigs and lined with moss and feathers. The note of this great bird is said to be "a tremulous, vibrating sound, somewhat resembling that of the screech owl." The great gray owl is also known as the Great Sooty Owl and the Spectral Owl. Its generic title, *Scotiaptes*, is from two Greek words, one meaning darkness and the other to frighten.

THE SAW-WHET OWL*

A curious name for a bird, we are inclined to say when we meet with it for the first time, but when we hear its shrill, rasping call note, uttered perhaps at midnight, we admit the appropriateness of "saw-whet." It resembles the sound made when a large-toothed saw is being filed.

Mr. Goss says that the natural home of this sprightly little owl is within the wild woodlands, though it is occasionally found about farm houses and even cities. It is very shy and retiring in its habits, however, rarely leaving its secluded retreats until late at eve, for which reason it is doubtless much more common throughout its range than is generally supposed. It is not migratory, but is more or less of an irregular wanderer in search of food during the autumn and winter. It may be quite common in a locality

and then not be seen again for several years. It is nocturnal, seldom moving about in the daytime, but passing the time in sleeping in some dark retreat; and so soundly does it sleep that oftentimes it may be captured alive.

The flight of the Saw-whet so closely resembles that of the woodcock that it has been killed by sportsmen, when flying over the alders, through being mistaken for the game bird.

These birds nest in old deserted squirrel or woodpecker holes and small hollows in trees. The eggs—usually four—are laid on the rotten wood or decayed material at the bottom. They are white and nearly round.

The small size of the saw-whet and the absence of ears at once distinguish this species from any owl of eastern North America, except Richardson's, which has the head and back spotted with white, and legs barred with grayish brown.

SCREECH OWL

The Screech Owl, sometimes known as the Little Horned or Red Owl, ranges throughout eastern North America. The most abundant of our owls, it is the smallest variety inhabiting the eastern United States, excepting the rare saw-whet owl. The plumage, regardless of age or sex, may be the common phase, a dark gray, or a rufous brown. The "red phase" shown in the plate is the rufous brown. These birds in some phase may be found in every portion of the United States, being divided by naturalists into about fifteen sub-species, each having a given range, such as Florida screech owl, Texas screech owl, Mexican





GREAT HORNED OWL.

screech owl, California screech owl, Rocky Mountain screech owl, etc. The territory inhabited by the common form is the region east of Kansas, across the continent to the Atlantic, and as far south as Georgia.

The notes of the screech owl are weird and more uncanny than even those of the other species. Like the howl of the coyote or the cry of the loon, there is something suggestive of human distress or agony in these notes. The quavering notes on the darkest night may induce a superstitious dread, but the birds deserve full protection, as they are highly beneficial because of their destruction of mice and other rodents and beetles.

The birds, usually resident throughout the year wherever found, have the habit of frequenting deserted buildings, often laying their eggs in some corner of an old barn or shed. Typical nests are placed in deserted woodpecker excavations or hollows in trees and stumps. Three to six pure white eggs are laid in April.

GREAT HORNED OWL

The Great Horned Owl, or Hoot Owl, is resident throughout eastern North America from Labrador to Costa Rica. It is one of our four American birds considered decidedly detrimental to the interests of man. The Department of Agriculture and the Biological Survey have both condemned this bird and imposed the death sentence upon him. The food in many instances is taken from barnyards; consequently, poultry enters largely into the bill of fare; many pellets, too, are found to contain the feathers and

bones of our most valuable wild birds, such as the bob-white and ruffed grouse. In other instances I have known horned owls to live in some hollow tree overlooking a corn crib or granary, where they subsist on rats.

The notes of the horned owl are a deep and loud "hoot," uttered particularly during inclement weather or before a storm, for in districts inhabited by these owls one seldom fails to hear the weird hootings when the barometer indicates a change of weather. It seems hard to imagine one of these solemn-looking birds, that stand so erect, sitting horizontally on her nest. However, they assume this position with ease, and the naturalist venturing forth into the snowbound wood in February, uses his field glasses to detect the two tufts of feathers, the only telltale signs that some old hawk's nest is occupied by this big bird.

The household duties of these hardy birds are commenced during the coldest days of February. Frequently an old nest of the great blue heron, red-tailed or red-shouldered hawk is used. Two to four pure white eggs are laid. Often the eggs are deposited in a hollow tree, where only a few feathers separate them from an ice foundation at the bottom of the cavity.

THE WESTERN HORNED OWL *

The Western Horned Owl is a variety of the great horned owl of eastern North America. It has a wide and extensive range, reaching from Manitoba on the north into the tablelands of Mexico on the south, and eastward from the Pacific Coast across the Great Plains. Occasionally specimens are



taken as far east as the States of Illinois and Wisconsin. It is replaced in the Arctic regions by the Arctic Horned Owl, which is lighter in color, its range only reaching as far south as Idaho and South Dakota. The Western horned owl breeds nearly throughout its range.

It feeds on grouse and ducks, as well as other species of valuable food water birds. It also kills many forest birds that are useful to man as insect destroyers. It is said that they will feed on mammals, such as polecats, prairie dogs, squirrels, rabbits, and other rodents. But this is not the worst crime of this marauder, for when it visits the more thickly inhabited districts it appreciates the delicacies to be found in the poultry yards of the farmer, and kills far more than it needs to satisfy its appetite.

"While perhaps the majority of these birds resort to hollow trees or old nests of the larger hawks and of the common crow, quite a number nest in the windworn holes in sandstone and other cliffs, small caves in clay and chalk banks, in some localities on the ground, and, I believe, even occasionally in badger holes under ground."

It is said that the Western horned owl will lay two or more sets of eggs at short intervals if the nest and eggs are disturbed. The number of eggs laid is usually two or three, and infrequently four are found, and sets of five and six have been reported. The eggs are white, showing, as a rule, but little gloss, and are roughish. In form they are rounded oval, about two and one-half inches long, and nearly two inches in diameter. The period of incubation lasts about four weeks, and it is said that only the female sits on the eggs, the male furnishing her with food.

SNOWY OWL

The Snowy Owl breeds from Labrador northward, and wanders southward in winter into the northern United States.

Like the hawk owl, it is diurnal in its habits, but is most active in early morning and again about dusk. Like the hawk owl, too, it occupies a commanding perch for hours on the watch, occasionally dropping on a rodent or sailing about, soon to return to the same perch.

"During January and February of 1902, there occurred a remarkable invasion by snow owls, reported from localities as diverse as southern Michigan and Long Island. They were especially abundant in Ontario, and were much sought for their plumage. According to Mr. Ruthven Deane, 'a Mr. Owens, taxidermist, living near Mooresville, Middlesex County, received and mounted twenty-two specimens during the winter, and commented on the fact that thirteen years ago he prepared exactly the same number, not having handled a single specimen during the interim.' Mr. Deane collected information of more than 430 of these owls that were killed during this one flight.

"The home of the snowy owl is on the immense moss and lichen covered tundras of the boreal regions, where it leads an easy existence, finding an abundant supply of food during the short Arctic summers. Hunting its prey at all hours, it subsists principally upon the lemming, and it is said to be always abundant wherever these rodents are found in numbers. Other small rodents are also caught,



SNOWY OWL

—BRIGHT THUNDER & MOUNTAIN—



AMERICAN HAWK OWL
(*Surnia ulula caparoch*).
‡ Life size.

as well as ptarmigan, ducks, and other waterfowl, and even the Arctic hare, an animal fully as heavy again as the owls." (Bendire.)

This great bird nests on the ground, laying from three to ten eggs.

HAWK OWL

The Hawk Owl is a handsome bird, shaped after the manner of our falcons, but the position of the eyes, shape of the tail, and habits of the bird are more in keeping with those of owls. In habits, plumage, and structure, it is the connecting link between hawks and owls. Its flight is swift and hawk-like, but noiseless; however, these birds see readily in daylight and are abroad in midday, even in our brightest weather. Their favorite haunts are in the northern portions of both continents, and only during the coldest weather do they find their way southward to the northern border of the United States. Their food is chiefly small rodents. In the fur country about Hudson Bay and the Anderson River region these birds nest quite commonly. The native fishermen experience perpetual daylight during May, June, and July; it would therefore seem that the hawk and snowy owls, being inhabitants of the Land of the Midnight Sun, are of necessity diurnal. When starting from a high perch, the hawk owl pitches down to near the height of bushes or grass, and flies off just over the top of the grass.

The nests, usually placed in coniferous trees, are composed of sticks, twigs, lined with hay, moss, and a few feathers, wherein four to six white eggs are laid. This bird

at times deposits its eggs in hollow stumps, after the manner of the screech and barn owls.

BURROWING OWL

The Burrowing Owl, one of our smallest owls, confines its range to the prairies and great plains from Missouri, Kansas, and Dakota westward. The Southeastern form, known as the Florida Burrowing Owl, inhabits the Bahama Islands and portions of Florida. The burrowing owl has become popular through various sensational articles describing the contents of a burrow on the cheerless prairie, as being shared by this little bird, the prairie dog, and the rattlesnake. It is true that burrowing owls, like prairie dogs, are found in communities, and inhabiting sections of the prairies that are perforated with burrows suitable for nesting sites; often holes constructed by mammals are utilized. It should be distinctly understood, however, that these owls choose only the abandoned burrows of rodents, principally those of the prairie dogs. Their nesting places are not shared by other creatures, unless an unwelcome guest should intrude. It is a common occurrence for a number of the owls to congregate and nest together, entering and departing from a single burrow. The males are kept busy supplying their mates with mice, small birds, and grasshoppers, so that this dirty little bird is a highly useful one.

Frequently the eggs are deposited on the bare earth; but if weeds, grass, or other material is available, the birds usually accumulate a small quantity on which to deposit their five to nine pure white eggs.



BURROWING OWL.
Speotyto cunicularia hypogaea
½ Life-size.

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CHAPTER XI

WOODPECKERS, CUCKOOS, ETC.

PAROQUETS belong to the parrot family. Of the five hundred species of this family, only one, the Carolina Paroquet, inhabits eastern North America, as most species are confined to the tropics. Two toes extend forward and two backward. The bill is strong and decidedly hooked, the upper mandible being movable, and used in climbing. These are arboreal, fruit-eating, seed-eating birds of bright plumage. They are good climbers and strong fliers. Almost all varieties of parrots can be taught to speak.

Mr. Frank M. Chapman says: "All cuckoos have two toes directed forward and two backward, but the cause or use of this characteristic is difficult to understand, so widely do the members of this family differ in habits. Some are arboreal, never visiting the earth; some are terrestrial, running with great swiftmess, and never perching far above the ground. Most cuckoos—all our thirty-five American species—have noticeably long tails which they raise and droop slowly just after alighting, or when their curiosity is aroused. Of the 175 known species, only two are found in the Northeastern States. Cuckoos are mysterious birds, well worth watching. I would not imply that their deeds are evil; on the contrary, they are exceedingly beneficial birds. One of their favorite foods is the tent caterpillar which spins the destructive 'worms' nests' in our fruit and

shade trees. Indeed, we should be very much better off if cuckoos were more numerous."

Kingfishers are fishing birds in America, though some Old World species are insectivorous and also feed on mollusks. They are solitary birds of local habits.

About twenty-five species of woodpeckers are found in North America. The feet have two toes extending forward and two backward. All toes are strong and equipped with long, sharp claws; the bills are strong and chisel-like. They are arboreal, though the flicker is found often on the ground, searching for ants. The tail feathers are stiff, ending in spines for propping the bird; the tongue is distensible and has a horny, spear-like tip suitable for probing into the holes of wood larvæ in order to spear and withdraw these grubs. These birds are of great economical value to agricultural and horticultural interests. The mate call includes the drumming with the bill on the dead trunks or limbs of trees. Eggs are uniformly white and placed in holes usually hollowed by the bird in the trunk of a tree.

CAROLINA PAROQUET

The range of the Carolina Paroquet is now restricted to parts of Florida; formerly north to southern Ontario.

"It was not possible that, in an age of guns and women, a creature of such beauty as the Carolina paroquet should have been spared to grace our landscape. Besides brilliant plumage, a dashing figure, and a strident voice, fondness for fruits and young grains conspired to bring about the practical extermination of this once abundant bird.



CAROLINA PAROQUET
Life-size.

“There are gray-haired men still among us who remember the shiekling companies of ‘parrots’ which used to haunt the bottom lands and go charging about the sycamores like gusts of autumn leaves; but today only the cunning plume-hunter or lucky ornithologist may penetrate to the remaining fastnesses of the species in the Everglades of Florida.”

The flight of the paroquet is graceful and swift, comparable in both respects to that of the passenger pigeon. The birds formerly moved about in companies of from fifty to five hundred, and, when making extended flights, or when coming down to feed, the flock fell into a V-shaped figure something like that made by the Canada geese. Although awkward in confinement where their movements are restricted, the birds move easily through the branches of a tree, now swinging head downward to reach a drooping seed, now regaining the perch by the aid of the powerful beak, which is used as a third foot. The birds were especially noisy during flight and at meals, screaming and chattering, but during the middle of the day they rested or cooed tenderly, as if it were the mating season. Their favorite food was the cockle-burr, which grows abundantly in low places. Besides this, they ate wild fruit of many kinds—persimmons, wild grapes, pawpaws—as well as beech nuts, acorns, and the round seed-balls of the sycamore. When settlers came, there was added wheat in the milk and cultivated fruits.

The birds roosted in great hollow trees, mostly sycamores, where the great beak, which did duty for hands and feet daytimes, rendered service as a hammock hook at night. It was in hollow trees also that they nested. They breed

in the South, in colonies, in cypress trees, the nest being a mere bunch of sticks placed at the forks of horizontal limbs, and containing, as is supposed, up to four or five white eggs. (Adapted from Dawson's "Birds of Ohio.")

It is claimed on good authority that these birds hibernated in northern latitudes.

ROAD-RUNNER

This is the Chaparral Cock of Texas, New Mexico, Colorado, and California. The Mexican knows him as the paisano, or snake-killer. At first glance their appearance is suggestive of a large cuckoo. I noticed Road-runners quite frequently through Texas. Entering the driveway ahead of the horses, these fleet-footed birds easily outdistanced the average traveler.

Their food consists largely of lizards, swifts, and other small reptiles. The nests are often placed in cactus plants. I found one March 8, 1909, at Camp Verdi, Texas. The nest was similar in construction to the cuckoo's, but much larger. Twigs, stems, and grass entered into the composition, but on the whole it was a very shallow affair, placed four and one-half feet up in a cedar tree by the roadside.

YELLOW-BILLED CUCKOO

The Yellow-billed Cuckoo ranges generally throughout North America, wintering in Central and South America.

The yellow-billed, like the black-billed cuckoo with the same range, is highly beneficial to the interests of agricul-



ROAD-RUNNER.

(*Geococcyx carolinensis*)

$\frac{1}{3}$ Life-size.



YELLOW-BILLED CUCKOO.
(Coccyzus americanus.)
 1/2 Life size.

ture and horticulture. These birds destroy immense numbers of caterpillars, moths, and beetles, hence are among our most useful birds. Birds of retiring habits, living chiefly in thickly foliated bushes or trees, they are seldom seen perching on the outside branches. Like our woodpeckers, two toes extend forward and two backward. The flight is swift, horizontal, and rapid. The tails are long and lightly colored at the tips, the outside tail feathers being decidedly the shortest.

Like our flycatchers, they appear from the South when the verdure has matured, and depart from their summer habitats before we have experienced our first cold weather. In September and October it is silent and suddenly disappears.

The notes are a series of low tones uttered while the bird is at rest or flying from one tree to another. They might be described as "chow-chow-chow-chow," with greater emphasis on the last two syllables.

The nest are of grass and twigs with a lining of dead leaves and grass, usually built in a crotch or on a horizontal limb, sometimes in a low shrub, not to exceed three feet from the ground. Orchards, second growth, and bushy pastures are favorite sites.

Two to five light blue eggs are laid in May or June. Several days may elapse between the time of laying one egg and the next one. As the parent begins incubation with the first egg, nests are often found containing both young and eggs. Sometimes the two species deposit their eggs in the same nest. The eggs of the black-billed cuckoo are slightly smaller and darker than those of the yellow-billed.

BLACK-BILLED CUCKOO

The Black-billed Cuckoo and the yellow-billed cuckoo resemble each other in appearance and habits so closely that a single article or plate might do for both. Indeed, it is a very difficult matter to distinguish these closely related species unless one is near enough to recognize the black color of the lower bill, which is the main distinguishing characteristic, or slight difference in color of tail, which has only inconspicuous whitish tips. The cuckoo, or rain crow, is one of our very interesting birds. It is closely related to the European cuckoo, which, like our cowbird, lays its eggs in the nests of other birds; but our cuckoos rear their own young, though there is a carelessness about the nesting habits even in our own species. Mr. Frank M. Chapman says: "There is something about the cuckoo's actions which always suggests to me that he either has done or is about to do something he should not." It is more easy to hear these retiring birds than to see them, as they avoid the outer branches of trees, and fly from the protecting foliage of one tree directly into the middle branches of another, so that it is difficult to see them except on the flight from tree to tree.

The nesting habits of the two species are so nearly identical that the differences have already been pointed out in the descriptions of the nesting habits of the yellow-billed cuckoo. The cuckoo usually utters his soft and beautiful notes of *Cuck-oo-oo*, *cuck-oo-oo* as he flies, but only, as a rule, when a few yards from the place on which he intends alighting.

FLICKER DUCK.
Colaptes auratus (Linn.)

1890.



BELTED KINGFISHER

The Belted Kingfisher breeds from the southern United States northward into Canada, wintering from Virginia and Kentucky to South America.

The birds are partial to certain ponds and creek holes, and only the freezing of the water drives them farther south, where they await the first spring thaw, returning as early as the latter part of February.

These saucy birds present a novel sight as they poise above the water and suddenly with closed wings drop head-foremost out of sight, only to appear with a minnow in the strong beak.

Probably no bird labors more persistently in constructing a nesting site than these winged fishers. In the perpendicular side of a sand or gravel bank, they burrow horizontally with one or two upward turns to a depth of from four to six feet. Several burrows are often made, one of which is used by the male as sleeping quarters. At the end of the nesting burrow, a bowl-like place is scratched, and into this birds disgorge countless numbers of fish bones. These become bleached, and the six to nine pearly-white eggs may be found resting upon this crude nest of undigested matter. The eggs are usually laid in May and the period of incubation is two weeks. Under the name of *halcyon*, the Kingfisher was fabled by the ancients to build its nest on the surface of the sea, and to have the power of calming the troubled waves during its period of incubation; hence the phrase "*halcyon days*."

THE IVORY-BILLED WOODPECKER *

In size, though hardly in beauty, this is indeed the prince of woodpeckers, the largest of our North American species. Its length ranges from nineteen to twenty-one inches. There is one other woodpecker, called the Imperial, which is larger, measuring twenty-three or twenty-four inches in length.

The Ivory-billed is now rare, and is apparently restricted to the extreme Southern States, especially those bordering the Gulf of Mexico. It is also found in western Mexico. It is of a wild and wary disposition, making its home in the dark, swampy woodlands. The dense cypress swamps of Florida are one of its favorite haunts.

The nest of the ivory-bill is excavated in a tree, about forty feet from the ground, the cavity often being nearly two feet in depth. Three to six glossy, pure white eggs are laid.

This bird does not remain long in one place, and during the day ranges over an extended territory. Its call is a high, rather nasal yap-yap-yap, sounding in the distance like the note of a penny trumpet.

All woodpeckers are of value to the farmer. It has been shown that two-thirds to three-fourths of their food consists of insects, chiefly noxious. Wood-boring beetles, both adults and larvæ, are conspicuous, and with them are associated many caterpillars, mostly species that burrow into trees. Next in importance are the ants that live in decaying wood, all of which are sought by woodpeckers and eaten in great quantities.



THE HAIRY WOODPECKER *

The geographical and the breeding ranges of the Hairy Woodpecker are practically the same. These include eastern North America from the southern provinces of Canada southward to the States bordering the Gulf of Mexico and those of the southeastern United States bordering the Atlantic Ocean. Though occasionally found in old orchards, its choice feeding grounds are the timbered regions of river banks and other bodies of water.

The hairy woodpecker is one of the most useful and valuable friends of human interests. Not only does it feed upon the larvæ that burrow in the wood and bark of our forest and orchard trees, but also upon beetles and other insects. It is only in the winter season, when its natural food is not readily obtained, that it gathers seeds and fruits. It never attacks a sound tree for any purposes, and the loss caused by the amount of useful grain destroyed is greatly overbalanced by the good that it does in the destruction of noxious insects.

Regarding the building of the nest, Major Bendire says: "Both sexes take part in the labor, and it is really wonderful how neat and smooth an excavation these birds can make with their chisel-shaped bills in a comparatively short time. The entrance hole is round, as if made with an auger, about two inches in diameter, and just large enough to admit the body of the bird; the edges are nicely beveled, the inside is equally smooth, and the cavity is gradually enlarged toward the bottom. The entrance hole, which is

not infrequently placed under a limb for protection from the weather, generally runs in straight through the solid wood for about three inches, then downward from ten to eighteen inches, and some of the finer chips are allowed to remain on the bottom of the cavity, in which the eggs are deposited. Both dead and living trees, are selected for nesting sites, generally the former.

DOWNY WOODPECKER

The Downy Woodpecker is often mistaken for the hairy woodpecker, from which it differs only in size and minor markings.

It ranges throughout eastern North America from Labrador to Florida. A rugged little climber, it is resident the year round wherever found. There are several forms of this species: the Southern downy, Gairdner's, Batchelder's downy, willow, and Nelson's downy woodpecker. It is like splitting hairs to distinguish one from the other, except that they are usually classed according to their locality or range. Practically every section of the United States and Canada contains one of the above forms.

Sociable little birds, during cold, wintry days they often visit the dooryards in company with chickadees and white-breasted nuthatches. Many observers attract these birds to their window-sills by tempting them with suet. They should be attracted to orchards by feeding them suet, etc., so as to have the benefit of their search for insects and their eggs and larvæ. This bird is highly beneficial to the interest of horticulture. Prof. Beal, of the Biological Survey, United





NUTTALL'S WOODPECKER

Dryobates nuttalli

States Department of Agriculture, reports it as the most beneficial of all woodpeckers, in spite of the fact that it is also the smallest. Seventy-five per cent of its food consists of ants, beetles, bugs, caterpillars, and grasshoppers, partaking only sparingly of wild fruits.

The eggs are deposited on an accumulation of rotted chips and dead wood at the base of a hollow limb or tree trunk which is dead and often soft from decay. The eggs, like those of all other woodpeckers, are pure white, with a glossy surface.

THE NUTTALL'S WOODPECKER *

The range of Nuttall's Woodpecker is long and narrow. Lying west of the Sierra Nevada and Cascade mountain ranges, it extends from the southern portion of the State of Oregon southward through California into the peninsula of Lower California. It is a denizen of the lower foothills throughout the length of its range. It is partial to the oaks that grow in the vicinity of streams, though it also nests in the old or dead limbs of cottonwoods, elders, willows, and sycamores. As a rule, it avoids coniferous trees.

Nuttall's woodpecker not only nests in the dead limbs or stubs of the trees already mentioned but also in the giant cactus. The nesting hole is seldom more than a few feet above the ground. Both sexes assist in the work of excavating and also in the incubation of the eggs.

Like many other woodpeckers, this bird is a devoted parent, frequently permitting itself to be caught rather than leave its nest when it contains eggs or young.

Mrs. Florence Merriam Bailey gives an excellent account of the habits of this woodpecker, in her "Handbook of Birds of the Western United States." She says: "It has a nuthatch-like way of flying up to light on the under side of a limb, and when hanging upside down turns itself around with as much ease as a fly on a ceiling. At times the small Nuttall waxes excited, and shakes his wings as he gives his thin, rattling call. All his notes are thin, and his quee-queep has a sharp quality. His chit-tah is a diminutive of the ja'cob of the California woodpecker. He is a sturdy little fellow and in flight will sometimes rise high in air and fly long and steadily, dipping only slightly over the brush. He has the full strength of his convictions and will drive a big flicker from a sycamore and then stretch up on a branch and call out triumphantly. Two Nuttalls trying to decide whether to fight are an amusing sight. They shake their feathers and scold and dance about as if they were aching to fly at each other, but couldn't quite make up their minds."

THREE-TOED WOODPECKER

The Three-toed Woodpecker is resident through Canada and into northern United States. It has the peculiar structure of only three toes on each foot.

"It is a restless, active bird, spending its time generally on the topmost branches of the tallest trees, without, however, confining itself to pines. Its movements resemble those of the red-cockaded woodpecker. Like it, it will alight, climb along a branch, seek for insects there, and in a very few moments remove to another part of the same tree, or to



AMERICAN THREE TOED WOODPECKER.

Illustrated by J. J. Audubon.



YEL. LOW-BELLIED SAPSUCKER
1/2 life size

another tree at more or less distance, thus spending the day in rambling over a large range. Its cries also somewhat resemble those of the species just mentioned, but are louder and more shrill, like those of some quadruped suffering great pain. It very frequently makes sorties after flying insects, which it secures in the air with as much ease as the red-headed woodpecker. Besides insects, it also feeds on berries and other small fruits.

"Its rapid, gliding flight is deeply undulated. Now and then it will fly from a detached tree of a field to a considerable distance before it alights, uttering at every dip a loud, shrill note.

"The nest of this species is generally bored in the body of a sound tree, near its first large branches. I observed no particular choice as to timber, having seen it in oaks, pines, etc. The nest, like that of allied species, is worked out by both sexes, and takes fully a week to complete, its usual depth being from twenty to twenty-four inches. It is smooth and broad at the bottom, although so narrow at its entrance as to appear scarcely sufficient to enable one of the birds to enter. Only one brood is raised in the season. The young follow their parents until autumn, when they separate and shift for themselves." (Audubon.)

YELLOW-BELLIED SAPSUCKER

The Yellow-bellied Sapsucker ranges throughout eastern North America, breeding in Massachusetts, Illinois, and north, wintering from Virginia to Central America.

This is the only sapsucker occurring east of the Great

Plains. In summer it may be found occasionally in the northern portions of Illinois and Indiana. Quite a few of the birds nest in the vicinity of Detroit, Michigan, and I have personally observed them during the breeding months in northern Wisconsin. Fifteen years ago the yellow-bellied sapsucker nested along the river bottoms of the Illinois and Kankakee rivers, but to-day they are rarely seen during the breeding season in this latitude. By many ornithologists the yellow-bellied sapsucker is considered the handsomest of our American woodpeckers.

The woodpeckers of this genus are the only ones to which the term sapsucker may with any propriety be applied. They lack the long, extensile tongue which enables the other species to probe the winding passages made by larvæ. The sapsuckers are found feeding largely upon the sap and inner bark of trees; they also feed upon insects attracted by the sap. In some localities they injure valuable timber by chipping off bark and girdling the trunk and larger limbs with small holes. This handsome bird devours many insects, but its fondness for the sap of trees, including apple and other orchard trees, with its habit of cutting out sections of the bark to obtain its favorite tippie, renders it injurious in some localities. It is one of a number of birds that are harmful and beneficial by turns, or according to locality. Little blame attaches to the orchardist who blacklists the sapsucker, but he should familiarize himself with the other woodpeckers, that he may distinguish this from other kinds.

The birds often excavate a nesting site in living trees, but in the mountainous regions of New Hampshire and



RED-BREASTED SAPSUCKER
Sphyrapicus ruber.
Nearly Life-size.

Maine the birds exhibit a decided preference for dead birches. The average height of the excavation from the ground is about forty feet. Many of the nests are gourd-like in shape, with sides very smoothly and evenly chiseled by both sexes, usually to the depth of about fourteen inches. Three to seven pure white eggs are laid.

THE RED-BREASTED SAPSUCKER*

The Red-breasted Sapsucker is a resident of the Pacific Coast, ranging from northern Lower California northward to southern Alaska. It extends its flight and breeds as far east as the Sierra Nevada and Cascade mountains. It belongs to the family of woodpeckers.

Like its eastern relative, the yellow-bellied sapsucker, it punctures trees, possibly in order to feed upon the exuding sap or the insects attracted by its flow. The adult birds are beautifully marked with crimson on the head and breast, while in the young the color is brownish and the yellow of the belly is wanting.

These birds seem to prefer aspen trees for their homes, selecting one which is a foot or more in diameter near the ground. They excavate a cavity in the trunk several feet from the ground, the door of which, a small round hole, less than two inches in diameter, seems far too small for the parent birds to enter.

These sapsuckers are watchful and devoted parents, and cases have been reported where the mother bird has been easily captured because of her refusal to leave her young.

As a rule, but a single brood is raised each season. There

are five or six eggs, and occasionally seven, in each set, which vary in form, though they are always of the ovate type. At times they are quite elongated. When fresh, the yolk may be seen through the thin shell, giving a pinkish shade to the egg. When the contents are removed the shell is white, showing some luster.

The food of this species, in addition to the sap and inner bark of the trees they puncture, if it is true that they use this as food, consists of ants, insect larvæ, moths, and butterflies, many of which are caught on the wing, and small fruits.

PILEATED WOODPECKER

The range of this noble bird was formerly the whole wooded region of North America.

"If the 'curse of beauty' be added to that of large size, the destruction of a bird is foredoomed. This magnificent black woodpecker, once common throughout the heavily timbered areas, has almost disappeared before the industrious axe and the all-conquering gun, and the day of the passing of the 'logcock,' or 'lumberjack,' is not far distant.

"In the spring of 1902, according to Mr. Sim, of Jefferson, Ohio, a pair of these birds nested within a mile of town. The nesting cavity was dug by the middle of April, in a beech tree, at a height of about thirty feet. Chips were strewn liberally over the ground below, and many showed characteristic chisel marks of the bird's powerful bill. During the nesting season the birds remained near, drumming, calling, and feeding. The flight, unlike that of other woodpeckers, is direct and not undulating.



PILEATED WOODPECKER
Geopelia striata
L. J. S. S. S.



RED-HEADED WOODPECKER
Caprimulgus vociferans

Illustrated by J. J. Audubon

"The drumming song is a series of about twelve taps, increasing in rapidity and growing less in strength to the end. I have heard this woodpecker give three vocal songs or calls. One is an exultant, ringing laugh; at a distance this call sounds metallic, but when at close range it is the most untamably wild sound that I know among the bird-notes. Another call might be suggested by the syllables cow-cow-cow repeated indefinitely, but sometimes intermittently, resembling the flicker's call. When two birds approach each other they often carry on a wheedling conversation, analogous to the 'Wichew' note of the flicker, but it is so given as to lead one to believe that the birds have their bills closed while making the sound.

"In its search for food the logcock strikes deliberately, but with force, often giving the head a powerful twist to wrench off a piece of wood. Sometimes quite a large fragment is thrown back by a toss of the head. Much time is also spent about fallen tree-trunks, where, in addition to grub and other insect larvæ, it subsists largely upon ants." (Dawson.)

RED-HEADED WOODPECKER

The Red-headed Woodpecker, abounding throughout eastern North America, is readily recognized in the adult plumage by the red head and white under parts, with the steel blue and white covering. The red-headed woodpecker is found as far west as Colorado, sometimes California. In summer it may be met with as far north as Ontario and Quebec, but is rare east of central New York. It is a striking bird when seen at a distance moving about the

trunk of a dead tree or telephone pole. Usually the nests are cavities chiseled into dead tree-trunks, though the birds may use living trees. The young, in the first plumage, are marked by the absence of red on the head.

Woodpeckers generally are of great value in their protection to trees, but the red-headed woodpecker is of greatest value, as he enjoys nothing more than a meal of young English sparrows just out of the shell. These birds often wedge acorns into cracks in trees and later extract the kernel; or an acorn is sometimes pounded to a meal and eaten, or the bird awaits development of larvæ in the acorn and eats that. They often catch insects on the wing, as do fly-catchers.

The birds often alight on a metal cornice or projection and call to their mates, alternately drumming and calling vocally.

The flight of all woodpeckers is characteristic; they pursue an undulating course, flying perhaps fifty feet until the wings close, and they drop a few feet, again regaining themselves. While generally regarded as migratory, if he finds plenty of food, such as beech nuts, he may winter in northern United States.

Four to six white eggs are deposited in cavity chiseled from a dead tree.

CALIFORNIA WOODPECKER

The California Woodpecker and a closely allied subspecies known as the ant-eating woodpecker are inhabitants of California. The plumage is chiefly black, while on the



CALIFORNIAN WOODPECKER

Picoides stricklandi

Adult ♂



RED BELLIED WOODPECKER
(*Melanerpes carolinus*)
: Lifesize

crown is the customary scarlet patch common to the males of most woodpeckers.

The California woodpecker has the habit of storing away acorns almost as persistently as do our squirrels. The birds select partially decayed trees and perforate the bark and trunk with small holes, into which they securely wedge these acorns, feeding upon them, and especially the larvæ they contain, during the winter months. In New Mexico these birds seem partial to small oak groves. In the Catalina Mountains of Arizona they may be met with at an altitude of 4,000 feet, living both in the pine and oak groves. Frequently a natural cavity is used as a suitable site for the eggs and young. Perhaps their habit of drilling small holes for the storage of acorns causes this bird to become less active in chiseling a cavity large enough to contain a setting of eggs. When the birds excavate holes for nesting sites a situation on the under side of a limb is frequently chosen. Sometimes they successfully drill a hollow in a living tree.

Four or five eggs are laid in April or May.

RED-BELLIED WOODPECKER

The Red-bellied Woodpecker ranges throughout eastern United States, nesting north of Massachusetts and Minnesota, wintering from Virginia and Ohio southward.

“For the coincidence I shall not try to account, but it is a fact that whenever the bird-man clears the snow from a log where the wood-choppers have been at work, and sits down, after a long morning’s work with the birds, to a shivering midwinter lunch, the red-bellied woodpecker, till

then silent, bestirs himself and begins to pout 'chow-chow-chow.' Careful attention discovers the pouting hermit taking his brief nooning in the middle heights of a twined tree-trunk, or else darkly silhouetted against the wintry sky. Here he hitches and grumbles by turns.

"To me there is something uncanny about this ascetic bird, who whiles away his winter hour in the seclusion of a narrow cell, and in spring, scarcely less unsocial, retires to the least frequented depths of the forest to breed. Far from the haunts of man, and secure in the protection of abundant leafage, the birds do unbend somewhat. At this season they have a chirruping cry, which only the experts can distinguish from the noisiest of the red-head's notes; and another, a very startling expression of mingled incredulity and reproach, 'Clark.' This is evidently analogous to the red-head's 'Queer.'" (Dawson.)

The nest is usually placed in holes some twenty feet from the ground, where four to six eggs are laid.

FLICKER

The red on the head, the black crescent on the cinnamon-brown breast, the yellow lining of wing flashing in undulating flight, and white spot on rump are striking field marks.

The Flicker, Yellow Hammer, Wake-up, or High-hold, known by no less than thirty-six names, is probably the commonest woodpecker on this continent. The northern or common flicker occurs in the eastern United States north of the Ohio River and west to the Rocky Mountains. It is a hardy bird, and, though migratory, does not pass beyond



FLICKER
Colaptes auratus
J. L. G. S.

the borders of the United States except during severe winters, when some of them may be met with in Central America and Mexico. Among the first harbingers of spring, the budding of the catkins and the flight of the flicker are conspicuous.

The males are droll creatures and so ardent in their wooing that they become unsuspicious of mankind. Three, and often five, yellow hammers may be seen ardently courting the same female, whose absence of red on the nape of the neck makes her identity certain. The flicker beats a rolling tattoo in spring. His vocal song proper is a rapid, oft-repeated "cuh-cuh-cuh." It also has a "weechew-weechew" song, from which comes its name "flicker." The quest of ants has led this bird to terrestrial habits, so that it seems to be gradually becoming a species of grouse. It is a very useful bird and should be protected, even though it may be fond of cherries.

In June, 1896, I noticed a flicker emerging from a hole in an apple tree. Examining the cavity, I found two eggs resting on bits of decayed wood fourteen inches below the entrance.

I removed one egg, leaving the other as a "nestegg"; returning day by day, repeating the operation during a period of forty days, when the female had deposited twenty-nine eggs. On one or two occasions there was an interval of three days between laying.

The nesting site is often a cavity which is originally dug by the birds in their quest for ants and larvæ. During the labor of excavation the season for maternal duties arrives, and the birds utilize the same tree on which perhaps half a

dozen woodpeckers have been more or less dependent for a living. Five to nine eggs are usually laid.

In the South Atlantic and Gulf states we have another form, slightly smaller than the northern flicker and a little darker in color. Colorado and the territory immediately westward is the home of the red-shafted flicker, a bird whose wing quills are bright crimson, instead of yellow.

CHAPTER XII

GOATSUCKERS, HUMMING-BIRDS, ETC.

NIGHTHAWKS, Whip-poor-wills, Swifts, and Humming-birds are found in the same order, though in different families. Nighthawks and whip-poor-wills belong to the goat-sucker family. Only seven birds of this family reach North America. Most of them live in forests, perching lengthwise on the branches of trees, in imitation of knots. The night-hawk is often found in treeless regions as well. Color protection of all species is strongly marked. Birds of this family capture their insect prey on the wing, aided by their large mouth, and in some species further helped by the stiffened bristles at the side of the mouth. Most of the birds of this family utter wierd notes, especially the whip-poor-will. The feet are weak, but flight is strong.

Swifts secrete glue from the throat in order to fasten sticks together to make their nests. The young are fed by regurgitation. Swifts are diurnal, while goatsuckers are nocturnal. Swifts are generally gregarious. While formerly using hollow trees, they now use chimneys almost exclusively. They feed while flying, never alighting except in the chimneys. The resemblance to swallows is only superficial.

Humming-birds are confined to the New World. Of the four hundred known species, only one, the ruby-throated, nests east of the Mississippi River, though the rivoli may be

seen in eastern United States after nesting season. Humming-birds feed on the wing. While feeding on insects, they also partake of the nectar of the flowers, using long beak as tube. The flight is insect-like, and is unequaled for number of strokes of their short wings.

THE CHUCK-WILL'S-WIDOW *

In the wooded ravines and timbered swamps of the Southern States the Chuck-will's-widow tells of its presence by frequently calling its own name. It, with the whip-poor-will and the nighthawk, belongs to the family of goatsuckers, and is closely related to the swifts. The family includes about eighty-five species of these peculiar birds, nearly all being natives of the tropics, though nearly every part of the world has representatives. The range of the chuck-will's-widow is quite limited. It includes the states from Virginia and southern Illinois southward to the Gulf of Mexico, and through Mexico into Central America. It is also found in Cuba.

Chuck-will's-widow is a bird of the twilight and night hours. Silent during the daylight hours, its penetrating voice, which is remarkably strong, may be continuously heard in the regions that it inhabits during the evening hours and for a time preceding the returning light of day. It is said that on a still evening its call may be heard for more than a mile. In its large eyes and head, its loose and somber-colored plumage, its quiet flight and nocturnal habits, it resembles the owls.

While hunting for food the chuck-will's-widow flies low,



CHUCK-WILL'S-WIDOW.

(Amphispiza bilineata.)

Life size.



often but a few feet above the surface of the ground. In this habit it differs from the nighthawk, which, like the swifts, seeks its food high in the air. Now and then it rests, perching on old logs or fences, from which it will launch forth in pursuit of prey which its keen eyes have sighted. During the day it roosts in hollow trees or upon a large limb in some densely shaded spot.

It does not attempt to build a nest. The two dull-white eggs are laid upon the ground or upon leaves in some secluded place in woods or thickets. It is said that this bird, when disturbed at its rest, will remove either its eggs or the young, as the case may be, to a place of safety by carrying them in its mouth.

WHIP-POOR-WILL

The Goatsuckers are inhabitants of both hemispheres. Whip-poor-wills breed practically from Virginia northward to the southern portions of Canada and westward across central United States to the states bordering the plains. Another species of goatsucker, the poor-will, inhabits the great plains and mountainous region to the Pacific Coast. The largest of the family, chuck-will's-widow, occurs in the South Atlantic States.

No order among the feathered tribe shows a greater expanse of mouth. The insectivorous food is caught on the wing. The lining of the mouth and throat is sufficiently adhesive to hold the moths and other insects which they capture on the wing.

We see the nighthawk and hear the whip-poor-will. Anyone who has not heard the notes of this bird may never

identify the author, whose name is taken from its notes. Much is said of the whip-poor-will's song, both in prose and poetry. The vocal notes are several shrill whistles repeated rapidly, and a better interpretation may be had by repeating the syllables "Pip-er-rip" rapidly in succession several times, not a mournful or melancholy sound, as one might infer from the name. This whistle is uttered by the bird while perched on a log or horizontally on a limb. The head is moved from side to side, causing the sound to vibrate from the woodland in waves.

These birds do not perch crosswise of a limb, but their bodies are parallel with the object on which they rest, head outward, to resemble a knot on the branch. Their feet are extremely weak, and the toes are not strong enough to allow the bird to grasp and fasten the claws to any perch.

In migration the birds travel in small flocks, and I have frequently flushed a dozen whip-poor-wills from the underbrush in April while looking for woodcocks. They do not fly until one is almost upon them, when they rise and move noiselessly through the air, soon alighting on a fallen branch.

The two eggs are laid on a bare leaf in wet places where the earth is partially shaded, thus producing a mottled effect which blends effectively with the birds' plumage.

The young of the whip-poor-will are covered with fine down of chestnut-brown. The spacious mouth of the parent enables her to remove her eggs to another spot if disturbed. Like most other birds which hunt by night, the eyes are exceedingly large for the size of the bird. The wings are long and narrow, and when flat at the sides of the bird touch the ground or the object on which the bird is perching.



NIGHTHAWK.
F. C. S. P.

NIGHTHAWK

The Nighthawk, or Bull Bat, often miscalled whip-poor-will, migrates in immense flocks, arriving in the Great Lakes region about the second week in May. Many pairs spend the summer in thickly settled districts, even raising their young on the roofs of residences and office buildings in cities. Open places, rocky hillsides, and stony pastures are favorite haunts, furnishing ample protection for the dull-plumaged bird. The name nighthawk is rather misleading, as the birds are not hawks, and seem to be equally at home on sunny days, cloudy weather, or after dusk.

In June, 1910, I found two young on a bare, flat limestone slab, where the only concealment was by means of protective coloration. The little fellows harmonized perfectly with the light and shade effect produced by old mullein stalks. The parents were very demonstrative about the young, the female feigning lameness.

The nighthawk and the whip-poor-will are often confounded or considered the same species. A careful comparison will at once show a very decided difference. The large white patches on the five outer primaries of the wings of the nighthawk are striking field marks in flight, resembling tattered holes. At twilight, or on cloudy days during summer months, great troops of nighthawks may be seen high in air over forest or town in search of insects, performing their wonderful evolutions and uttering their peevish cries, or swooping down with their strange booming or rumbling sound. Thus they continue till the gloaming merges into

darkness and their flight is seen no longer. The booming noise is made by the wind passing through the primaries in their mad plunge towards the earth. Their food is entirely insectivorous, hence it is one of our most useful birds.

The nighthawk, like other members of the family, rests on branches of trees, perched lengthwise with head outward, resembling a knot on the tree. On the prairies it roosts on the bare earth, where the color perfectly harmonizes with the surroundings.

CHIMNEY SWIFT

The Chimney Swift ranges throughout eastern North America, breeding from Florida to Labrador, wintering in Central America. These birds, commonly called the chimney swallows, are powerful fliers, and their wings, in proportion to their bodies, are probably longer than those of any other American bird. One of the best examples of the adaptability of the tail may be seen in the way it serves as a prop or support to the bird, whose feet are otherwise too feeble securely to support the owner. Swifts are frequently seen flying in groups of three, and naturalists have concluded that they may be polygamous.

One of their most remarkable traits is the manner in which they construct their nests. In former years swifts nested in hollow trees or in crevices in the rocks and cliffs; at sundown immense numbers could then be seen pouring into the top of a hollow tree, just as now hundreds will congregate in a chimney.

Western North America, particularly the mountainous regions, is still the home of several species of swifts, whose

nests are fastened to the perpendicular walls of old missions or between crevices in the rocks. Occasionally an old, abandoned well is used.

It is noticeable that swifts fly higher during clear, sunshiny weather, and an extreme or abrupt change in the weather may be safely forecasted when the birds are noticed skimming low over the roofs.

Their only note is an unmusical twitter, which they utter when flying at top speed. The shafts in the tail extend fully one-quarter of an inch beyond the feathers, but these are not visible in flying; neither is the insignificant bill; so that one discerns merely a pair of long wings attached to a little body, and the bird might easily be mistaken for a bat.

Swifts are closely allied to nighthawks and the whip-poor-wills. They exhibit little intelligence, except in the construction of their nests, and, were it not for their abundance in most sections, the birds would be little noticed by the casual observer. Their flight, while strong and powerful, is not picturesque or graceful. The wing-beats are short and rapid, but the bird sometimes soars when about to enter a chimney. The outline against the sky reminds one of a drawn bow and arrow.

Accommodating itself to the advance of civilization, the nests are now usually placed on the inside of brick chimneys, though they may be found firmly glued to the inside of a barn or outbuilding. The nests are composed of small twigs which the birds snap with beak from the trees while in flight. These twigs are of about equal length, and are fastened to each other by a glue in the form of saliva secreted by the birds themselves from the throat. The nests are attached to

the brick or woodwork so firmly that to remove the semi-circular basket of twigs from its original place will invariably result in a portion of the brick chimney or woodwork adhering to the nest proper. They are closely allied to the Chinese swift that secretes the edible nest, regarded by the Chinese as their greatest delicacy. This interesting little bird may be studied best by placing a mirror at an angle in the chimney where stovepipe enters.

The chimney swift lays from two to five pure white, long, fragile eggs. Swifts are decidedly insectivorous, feeding only on the wing. Rarely do they alight to rest, and then only in chimneys, so that it may be conservatively stated that a swift spends the entire time after sunrise until sunset on the wing, except when maternal duties demand the attention.

HUMMING-BIRDS*

It has been said that what a beautiful sonnet is to the mind, one of these fairy-like creations is to the eyes. This is true even in the case of mounted specimens, which must necessarily have lost some of their iridescence. Few can hope to see many of them alive. The gorgeous little birds are largely tropical, the northern limit of their abundance as species being the Tropic of Cancer. They are partial to mountainous regions where there is diversity of surface and soil sufficient to meet their needs within a small area. The highlands of the Andes in South America are the regions most favored by a large number of species.

The eastern part of the United States has but one representative of the Humming-bird family, and only seventeen



HUMMINGBIRDS.
Life-size.

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species have been found within the limits of the country. Most of the hummers are honey-lovers, and they extract the sweetest juices of the flowers.

The "soft susurrations" of their wings as they poise above the flowers, inserting their long beaks into tubes of nectar, announce their presence.

The nests of the humming-birds are of cup shape and turban shape, are composed chiefly of plant-down, interwoven and bound together with spider webs and decorated with lichens and mosses. Usually the nest is saddled upon a horizontal or slanting branch or twig.

"Dwelling in the snowy regions of the Andes are the little gems called Hill-stars," says Leander S. Keyser, "which build a structure as large as a man's head, at the top of which there is a small cup-shaped depression. In these dainty structures the eggs are laid, lying like gems in the bottom of the cups, and here the little ones are hatched. Some of them look more like bugs than birds when they first come from the shell."

THE RIVOLI HUMMING-BIRD *

The Rivoli, or the Refulgent Humming-bird, as it is frequently called, has a very limited range. It is found in the "mountains of southeastern Arizona, southwestern New Mexico, and over the table lands of Mexico," southward to Nicaragua. It is one of the largest and most beautiful of the humming-birds that frequent the United States. Its royal appearance led Lesson, in the year 1829, to name it Rivoli, in honor of M. Massena, the Duke of Rivoli. It is

noted "for the beauty of its coloring and the bold style of its markings."

Mr. H. W. Henshaw, who was the first scientist to discover that the Rivoli was a member of the bird fauna of the United States, thus describes its nest: "It is composed of mosses nicely woven into an almost circular cup, the interior possessing a lining of the softest and downiest feathers, while the exterior is elaborately covered with lichens, which are securely bound on by a network of the finest silk from spiders' webs. It was saddled on the horizontal limb of an alder, about twenty feet above the bed of a running mountain stream, in a glen which was overarched and shadowed by several huge spruces."

The note of this bird gem of the pine-clad mountains is a "twittering sound, louder, not so shrill, and uttered more closely than those of the small hummers."

As the Rivoli hovers over the mesal and gathers from its flowers the numerous insects that infest them, or as it takes the sweets from the flowers of the boreal honeysuckle, one is reminded of the words of the poet:

"Art thou a bird, a bee, or butterfly?"

"Each and all three—a bird in shape am I,
A bee, collecting sweets from bloom to bloom,
A butterfly in brilliancy of plume."

RUBY-THROATED HUMMING-BIRD

The Ruby-throated Humming-bird is decidedly the smallest feathered creature inhabiting North America at large east of the great plains; it winters in southern Florida



RUBY-THROATED HUMMINGBIRD.
About Life-size.

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and Central America. Many of us look upon the humming-bird as a migrant of the flower bed and gardens, where they may be seen poised in air, moving their tiny wings so rapidly as to show only a blurred outline. The musical hum of the vibrating wings gives rise to the name. While thus poised it inserts the slender, tube-like bill into the long blossoms of the trumpet-creeper and other flowers for the nectar. Their fondness for the honey often tempts the little bird to nest in shade trees or saplings in close proximity to gardens, though we are apt to encounter these birds in our timbered areas far from the habitation of man, where they are earning their livelihood, as all hummers originally did, by capturing minute insects.

Their note is a kind of squeak, or chatter, less musical than the hum of its wings. The Rocky and Sierra Nevada mountains of North America are the homes of many varieties of humming-birds, all of which are migratory, and in some instances they may be found breeding in colonies. The males of the various species are conspicuously colored about the head with some shade of red or purple.

Ruby-throated humming-birds are aggressive about their nesting sites and frequently disclose the presence of their abode by buzzing about the head of the intruder. I have seen the females fly with full force to about twelve or sixteen inches above the nest, when the flight is suddenly checked and the bird descends like a parachute onto her nest. While the ruby-throat is the only humming-bird nesting east of the Mississippi, the rivoli wanders east of the Mississippi after nesting.

The nest of the ruby-throated is a marvel in bird archi-

ture. It is usually placed on a horizontal limb in a deciduous tree on timbered hillsides or along streams, and sometimes about gardens. Externally the nest is covered with small lichens, which the bird removes from the bark of dead timber. These lichens are held in place by spider webs, which the birds carefully weave about the nest. Down from the cottonwood and willow is used as a lining. Into this dainty receptacle two long, narrow white eggs are laid. Two broods are reared in a season and the birds frequently use the same nest for both broods.

THE BLACK-CHINNED HUMMING-BIRD *

The Black-chinned Humming-bird has a long and narrow range extending along the Pacific Coast from southern British Columbia southward into southern Mexico, where it passes the winter. Eastward its range extends to western Montana, western Colorado, New Mexico, and western Texas. In some portions of this range it is very abundant, while in others that are apparently as well suited to its habits it is rare, or never seen at all.

This humming-bird, which also bears the names purple-throated and Alexandre's humming-bird, is very similar in its habits to our eastern ruby-throat. Even in its call notes and antics while wooing its mate it is almost a counterpart of the eastern species.

Next to the Anna's humming-bird, the black-chinned is the most conspicuous of all the humming-birds that frequent southern California. At twilight it is a frequent visitor to the orange groves, and later, as night approaches, it retires



BLACK-CHINNED HUMMINGBIRD
(*Trochilus alexandri*)
About Life-size



ANNA'S HUMMINGBIRD.
Life-size.

to the mountain sides, where, with numerous individuals of its own kind and other birds, it finds a resting-place through the dark hours.

The nests are delicate affairs, and in many cases resemble small sponges, readily assuming their normal form if the edges are pressed together. The inner cup is seldom more than one inch in diameter. The walls are usually composed of the down of willows. This is firmly woven by an unsparing use of spider web. Usually a few small leaves and scales of willow buds are attached to the outer face, evidently to give it stability.

It has been stated that humming-birds invariably lay but two eggs in each set. The female black-chinned humming-bird seems to be at least one of the exceptions that prove the rule. Major Bendire says that "nests of this species now and then contain three eggs, all evidently laid by the same female, and such instances do not appear to be especially rare."

THE ANNA'S HUMMING-BIRD *

Such a dainty dress as that worn by most of the humming-birds deserves constant attention. Appreciating this, these little lovers of sunshine are very fond of preening their beautiful feathers.

Although the nectar of flowers forms a large part of their food, it has been shown that insects also form no inconsiderable portion.

The high degree of intelligence possessed by the humming-birds is shown in the construction of their nests. Some of the species make the nests "of such form or material as

will serve to imitate natural excrescences of a branch, such as a knot or a pine cone." Other species make a hammock-like nest that they suspend from cliffs by attaching spiders' webs. The eggs of the humming-birds, almost invariably two in number, are white and free from spots.

The Anna's Humming-bird of our illustration is one of the most striking of those best known. It is, perhaps, the most beautiful of the species that frequent the United States. It is a native of California and in its migrations passes southward through Arizona to the table lands of Mexico. It is also found in Lower California.

The head and ruff of the male have a lustrous, metallic, purplish-red color. The female is bronze-green above, though the top of the head is sometimes brownish, showing but little if any metallic luster. Both sexes vary somewhat in color. This is especially true of the males, some individuals having more purplish-red on the crown and throat than others.

This species inhabits a metal-producing region, and it is an interesting fact, as cited by Mr. Gould in his *Monograph of the Humming-birds*, that "those districts or countries having a metalliferous character are tenanted by species of humming-birds which are more than ordinarily brilliant and glittering."

THE BROAD-TAILED HUMMING-BIRD *

If we desire to study the Broad-tailed Humming-bird in the regions that it frequents we must journey to the mountainous district of western North America. Here it may be



BROAD-TAILED HUMMINGBIRD.
(*Selasphorus platycercus*.)
Life-size.

COOPER

found in large numbers, for it is the most common of all the species that frequent the mountains. It seeks its food of insects and honey from the flowers of a prolific flora extending from Wyoming and Idaho southward through Colorado, New Mexico, Arizona, Texas, and over the table lands of Mexico into Guatemala. It is pretty generally distributed throughout the various mountain systems between the eastern slopes of the Rocky Mountains and the Sierra Nevadas.

The broad-tails are very abundant in the balsam and pine belts of the San Francisco Mountains of Arizona, where their principal food plants are the scarlet trumpet flower and the large blue larkspur.

It seems strange and unnatural that so delicate a bird and one so highly colored should frequent localities where periods of low temperatures are common. Yet the broad-tailed humming-bird prefers high elevations and has been known to nest at an altitude of eleven thousand feet, and it seldom breeds at places lower than five thousand feet.

The males leave for their winter home very early in the season. Usually this migration takes place very soon after the young birds leave their nests. Mr. Henshaw attributes this movement of the males to the fact that their favorite food plant, the *Scrophularia*, begins to lose its blossoms at this time. He says: "It seems evident that the moment its progeny is on the wing and its home ties severed, warned of the approach of fall alike by the frosty nights and the decreasing supply of food, off go the males to their inviting winter haunts, to be followed, not long after, by the females and young. The latter, probably because they have less strength, linger last."

THE RUFOUS HUMMING-BIRD*

This hardy little "Hummer," which is even smaller than our well-known ruby-throated humming-bird, is weighted with a number of popular names. Among these are the "rufous-backed humming-bird," the "ruff-necked honey-sucker, or humming-bird," the "rufous flamebearer," and the "cinnamon hummer."

The Rufous is probably the most widely distributed of all the humming-birds. Its range extends throughout western North America. It breeds from the higher mountains of southern California northward, near the coast, to southern Alaska. In its migrations it flies eastward to Montana, Colorado, and thence southward through New Mexico to western Texas. In fact, during this period it frequents the eastern slopes of the Rocky Mountains, adding beauty to this wild region. Its winter home is chiefly in Mexico and Lower California.

The nest of the rufous humming-bird resembles those of many other species of hummers, and it is very much like that of the Anna's humming-bird. The framework is composed of delicate tree mosses and fine bark fiber, the outer face of which is sometimes adorned with lichens, though not so profusely as is that of the Anna's, and fastened together with spiders' webs and the silky threads from cocoons. It is lined with the fine cotton down of plants, especially that of the willow, and the pappus of the Compositæ. These nests seem large when compared with the size of the bird. The average nest measures about one and one-half inches in the



RUFIOUS HUMMINGBIRD.
Life-size.

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ALLEN'S HUMMINGBIRD
(*Selasphorus aleni*)
Life-size



outer diameter and one and one-fourth inches in depth. "Their nesting sites may be looked for in low bushes, as well as on the horizontal limbs of trees at various distances from the ground."

ALLEN'S HUMMING-BIRD *

The Humming-birds, with their varied beauties, constitute the most remarkable feature of the bird-life of America. They have absolutely no representatives in any other part of the world, the swifts being the nearest relatives they have in other countries. Mr. Forbes says that they abound most in mountainous countries where the surface and productions of the soil are most diversified within small areas. They frequent both open and rare and inaccessible places, and are often found on the snowy peaks of Chimborazo as high as sixteen thousand feet, and in the very lowest valleys in the primeval forests of Brazil.

These birds are found as small as a bumblebee and as large as a sparrow. The smallest is from Jamaica, the largest from Patagonia.

Allen's hummer is found on the Pacific Coast, north to British Columbia, east to southern Arizona.

Mr. Langills, in *Our Birds in Their Haunts*, beautifully describes their flights and manner of feeding. He says: "There are many birds the flight of which is so rapid that the strokes of their wings cannot be counted, but here is a species with such nerve of wing that its wing-strokes cannot be seen. 'A hazy semi-circle of indistinctness on each side of the bird is all that is perceptible.' Poised in the air,

his body nearly perpendicular, he seems to hang in front of the flowers which he probes so hurriedly, one after another, with his long, slender bill. That long, tubular, fork-shaped tongue may be sucking up the nectar from those rather small cylindrical blossoms or it may be capturing tiny insects housed away there. Much more like a large sphynx moth hovering and humming over the flowers in the dusky twilight than a bird appears this delicate, fairy-like beauty.

CHAPTER XIII

FLYCATCHERS

FLYCATCHERS are songless perching birds; not that they are voiceless, but the vocal organs are not so highly developed as those of other perchers. This family is peculiar to America, as the Old World flycatchers differ so radically from the family found in the New World as to constitute a different family. Flycatchers are mostly tropical, thirty-five species being found in the United States. Highly migratory, these insectivorous birds seldom appear on their breeding-grounds until the foliage is well under way and insect life abundant. Flycatchers, with their dull plumage, are generally of solitary disposition; they perch in some conspicuous place, where they dart out after passing insects, then return to the same perch. They are highly beneficial to agriculture and horticulture.

SCISSOR-TAILED FLYCATCHER

A singularly attractive bird, readily recognized by its remarkable tail, it is common in Texas, Oklahoma, and Arkansas, extending the range irregularly into many of the more eastern and more northern states. In Texas these birds may be seen in great numbers perched on the telephone wires. They are increasing in number, a fortunate circumstance, as Texas is scourged with insects. This bird keeps up the reputation of the family by living peaceably

with its neighbors of smaller birds, while boldly driving away birds of prey.

Nests are often placed in mesquite bushes, where soft substances, such as cotton, wool, and rags, are incorporated in the structure. Four eggs, taken May 23, 1901, at Navasota, Texas, were placed forty-five feet from the ground in a nest loosely made of grass, weeds, and stems.

KINGBIRD

The Kingbird, or Bee Martin, abundant about the Mississippi Valley and Great Lakes region, ranges as far north as New Brunswick and Manitoba, wintering in Central and South America. The range extends as far west as the Rocky Mountains, where it is replaced by the Arkansas kingbird. The extreme southern portion of the United States is the home of the gray kingbird, a species resembling our common kingbird in both appearance and habits. The kingbird appears as a soberly plumaged bird, with a large tail tipped with white. On close inspection we discover a beautiful orange crown, but this color is confined to the base of the feathers on the top of the head, and, therefore, is not distinguishable as a field mark.

Kingbirds are restless and aggressive, attacking crows, herons, and hawks, sometimes alighting on the backs of these large birds and tormenting them while the intruders beat a hasty retreat. They seldom molest the cunning catbird, for, as one writer states, "Kingbirds become near-sighted when attempting to pursue this retiring bird of the thrasher family." One bird-observer tried to test the king-



RED-TAILED FLYCATCHER
(*Myiophobus ruber*)



KINGBIRD,
(*Tyrannus tyrannus*)
Life-size



ARKANSAS KINGBIRD.
(*Tyrannus verticalis*)
; Lill.

20018

bird's pluck by flying a kite directly over a tree containing the nest. As the kingbird approached the kite the observer gradually pulled the cord until the pursuer was almost upon the object, then suddenly released the cord, and the kingbird, unable to check his flight, went head first through the paper covering. This unexpected experience completely outwitted the saucy flycatcher, which withdrew from the scene.

These birds subsist entirely upon insect life, frequently living about the habitations of man. Farmers are inclined to kill these birds because they destroy bees. Examinations made by several of our Government experts disclose the fact that, of the bees consumed by the kingbird, ninety-eight per cent are drones. The bird is usually after the moths which infest the hives; it is, therefore, a friend of the bee-keeper; it is, in fact, one of our most useful birds and deserves full protection. It is interesting to watch it dash after passing insects, snapping them up and returning to same perch, usually a dead limb.

The nests are bulky, composed of hay, twine, vegetable down, and any soft substance available. The lining is of finer material. Often the nests are placed in fruit or shade trees, at comparatively low elevations. Three to five creamy-white eggs, handsomely speckled with lilac and purple, are laid.

ARKANSAS KINGBIRD

The Arkansas Kingbird, a handsomer species than our common kingbird, inhabits the United States from Kansas westward to California. Unlike our eastern species, it does

not seek the habitation of man, but retires to the uncultivated sections of the country, and is partial to the patches of oak or orchards overlooking the plains. Great insect-destroyers, like all other flycatchers, their process of assimilation is so rapid that one can scarcely realize the quantity of winged pests they daily consume.

The Department of Agriculture made a careful examination of the crops of sixty-two of these beneficial birds, finding nearly thirty honey bees, only one of which was a worker.

The Arkansas kingbirds sometimes nest in odd situations about fences or stumps, but usually they nest in a low tree. Three to five light green eggs, spotted with purple, are deposited in bulky nests composed of weed stems, wool, and hair.

ASH-THROATED FLYCATCHER

The Ash-throated Flycatcher is very similar to our crested flycatcher of the eastern United States. The range of the ash-throated is west of the Rocky Mountains, where they are comparatively common in Utah, Colorado, Nevada, and Oregon. A shy bird of retiring habits, it prefers the solitude of deep shady forests, where the insect food of this useful bird abounds. It is usually sole possessor of the tree in which its nest is built. Like the kingbird, this beautiful flycatcher is pugnacious, attacking all feathered intruders when they appear near the old cavity containing the nest.

Old hollows, formerly used by squirrels or woodpeckers, are favorite nesting sites. The eggs, like those of the crested



ASH-THROATED FLYCATCHER
♂ Life-size

J. A. MURPHY, ARTIST



PHOEBE.
J. L. L. 1877.

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flycatcher, are handsome and peculiar in markings. Four to five creamy eggs, marked with purple streaks, are laid, usually in June.

PHOEBE

The Phœbe, often called Pewee and Bridge Bird, was formerly the most familiar of our flycatchers. It arrives in the Central States and Great Lakes region in advance of most other insectivorous birds. Frequently the appearance is a little premature, as our climate is subject to severe changes, and it may find few insects. The breeding range extends as far north as the Hudson Bay region and west to Kansas and Nebraska. In winter it is found from North Carolina to Cuba and Mexico.

The note is a plaintive "phœ-bee" accompanied by a jerking of the tail. Sociable birds, they take readily to the habitations of man, nesting about the porches in corrals and under bridges. They do not possess the aggressiveness typical of the kingbird and crested flycatcher, but remain patiently on some twig or fence post, darting out at the insects which come within range of their sharp eyes. These highly beneficial birds are far less common than formerly, due largely to parasitic insects which often cause the death of the offspring; often when rearing the second family the quarters are for this reason changed. The English sparrow is another cause of the lessened numbers of these birds, which now seldom build about outbuildings, as formerly, but select bridges, where sparrows are less in evidence.

Fifty years ago ornithologists described the eggs as pure white, but they are evidently undergoing a change, as few

nests now contain immaculate eggs. One or two, if not all in the set of four or five, have light reddish specks, and the background is creamy instead of pure white. Two or three broods are reared in a season.

OLIVE-SIDED FLYCATCHER

The Olive-sided Flycatchers, though comparatively rare in all sections of the United States, still range over practically the entire continent from the Atlantic to the Pacific and as far north as Greenland. Their breeding-grounds are coniferous forests, usually in mountainous regions or low, swampy woods. In the Great Lakes region the bird is less common than in the New England States and through the White and Green mountain regions of New Hampshire and Vermont. In feeding these long-winged birds usually resort to a high branch, from which they dart out after every passing insect, returning to the same perch.

The nest of moss and evergreen twigs is usually placed high up in a clump of evergreen. The background of the eggs is a beautiful deep creamy yellow, and the markings appear in the form of specks and spots of purplish-brown and lilac, particularly at the larger end.

WOOD PEWEE

A sober-plumaged little bird common in eastern North America from the Gulf States northward into the southern half of Canada, while the range in latitude is from the Atlantic to the great plains, wintering in Central America.



OLIVE-SIDED FLYCATCHER.
About Life-size

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WOOD PEWEE.
? Life-size.

REPRINTED FROM "THE BIRD" BY A. W. MORTIMER, 1914.

Many are familiar with the melancholy notes of this little bird, but perhaps half of the casual observers are personally unacquainted with the author. The sad, sweet, prolonged note, "pee-wee-peer," is uttered at various times throughout the day. "His pensive, gentle ways are voiced by his sad, sweet call, 'pee-a-wee.' The notes are as musical and restful, as much a part of Nature's hymn, as the soft humming of a brook. All day long the pewee sings; even when the heat of summer silences more vigorous birds, and the midday sun sends light-shafts to the ferns, the clear, sympathetic notes of the retiring songster come from the green canopy overhead, in perfect harmony with the peace and stillness of the hour." (Chapman.)

These little birds feed largely upon insects, hence are of great economical value. They are decidedly partial to warm weather, not arriving from the South until May, when the foliage is quite dense and the damp woodlands and shady groves abound in minute insect life.

When making his first observations of birds the writer found the Wood Pewees common in the apple orchards about the Great Lakes region. The nests are usually cunningly concealed on low horizontal branches. Moss and lichens gathered from dead limbs and fence rails covered the outside of the nests, and these blend so cleverly with the limb on which they are saddled that detection is difficult. Ofttimes while searching for the nest both birds remain close by, calling in their sweet but mournful tones. The little nests are lined with fine grass and stems and usually contain three cream-colored eggs marked about the larger end with spots of lilac and purplish-brown.

YELLOW-BELLIED FLYCATCHER

The Yellow-bellied Flycatcher breeds from Massachusetts to Labrador, and winters in Central America.

The Empiconaces, or gnat-kings (as the Greek name signifies), as a group offer peculiar difficulties to the bird student. Although separated into many species, the distinctions are so fine and the birds in the hand really look so much alike that their identification is often involved in doubt and confusion.

“The keys to an acquaintance with the four species of ‘gnat-kings’ which occur in the East are to be found in the characteristic notes or haunts of each. The species under consideration is the least known of the four. It is found in central United States only during migrations, when it is very quiet and very secretive. Dr. Wheaton says of its habits: ‘It is seldom found perched near the extremity of limbs watching for or capturing flying insects, but it is generally seen in the midst of a low thicket or fence row, and at the first intimation that it is an object of observation seeks further concealment by hiding near the ground and remaining motionless. None of the family are such adepts at concealment, its habits in this respect resembling those of the Connecticut and mourning warblers.’

“The ordinary note of this bird is described as ‘an abrupt pse-ek, almost in one explosive syllable,’ in which case it cannot be so unlike the familiar ‘cle-otip’ note of the Acadian flycatcher. It has, however, a more distinctive call — ‘a soft, mournful whistle consisting of two notes, the sec-





GREEN-CRESTED FLYCATCHER
(*Empidonax virescens*).
Life-size.

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ond higher pitched and prolonged, with rising inflection, resembling, in a measure, chu-e-c-p.'” (J. Dwight, Jr.)

ACADIAN OR GREEN-CRESTED FLYCATCHER

The Acadian Flycatcher, or Green-crested Flycatcher, ranges throughout eastern North America to Ontario, wintering in Central America.

In low, damp woodlands the Acadian flycatcher chooses to spend the summer. Within the shadow of a single wood it finds its mate, rears its young, and gathers strength for the return to winter quarters in Central America.

The first notice which we have of the bird's arrival, some time during the last week in April, is a fairy sneeze, heard in the depths of the wood, “Cleotip.” This note comes not from the tip of some dead limb in full view, as would be the case with other flycatchers, but from a clear space on some lower limb. The bird delivers his salutation with apparent effort, and he jerks his tail at the same time by way of emphasis. His repertory of song contains no other notes save a low humming titter of adulation, common to the little flycatchers, and a sharp scolding note.

It is not altogether unusual to find the Acadian flycatcher frequenting second-growth clearings and the woody borders which face damp brush lots, but he is more commonly found along some unfrequented wood-road, or in the gloomy heart of the forest. Here he waits for mosquitoes and midges, darting at them suddenly from his perch, making a quick turn while bringing his mandibles together with a click.

Here, too, in some dim aisle of the forest, from the feathery tip of a branch, a frail cradle is swung. It is a shallow saucer of fine twigs, leaf-stems, or the stalks of some slender vine, made fast by the edges to forking twigs or half supported by them. Usually the materials are loosely interwoven and bound together by cobwebs. Occasionally the affair is so careless that it merits Dr. Wheaton's comparison, "a tuft of hay caught by the limb from a load driven under it." Into the frail saucer three eggs are commonly placed. Many eggs must be lost each season, for any considerable wind would upset them. (Dawson.)

TRAILL'S FLYCATCHER

In northern Illinois and Indiana Traill's Flycatcher is common. It is found generally distributed throughout North America, breeding from northern Illinois and northern New England to Alaska, and wintering in Central America. Considerable controversy has arisen during the last ten years as to whether the lower part of the Great Lakes region is the home of Traill's flycatcher or a closely allied sub-species called the Alder flycatcher. However, both have the same habits and their difference is hardly distinguishable except to the specialist who might have several specimens of each before him for comparison. Traill's flycatcher is a rather retiring little bird inhabiting second-growth in wet places, often along streams or on the edges of our small inland lakes.

How clearly the disposition of our birds is foretold by the position in which they carry their tails! The drooping



TRAILL'S FLYCATCHER.
Life-size.

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VERMILION FLYCATCHER.
♂ Life

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tails of the wood pewee, phœbe, and Traill's flycatcher indicate a rather pensive and demure disposition, in striking contrast to the demeanor of the nervous insectivorous warblers that move from branch to branch, impulsively jerking their tails from side to side.

Traill's flycatcher is one of the last birds to join us in the spring. Like the humming-bird and scarlet tanager, it moves northward leisurely, not arriving in the Great Lakes region until well along in May.

The birds feed entirely on insects, which they capture on the wing, usually by darting from their perch at every passing fly or bug, many of which are too small to be distinguished by the naked eye, so they are highly beneficial.

While fairly common in Ohio and the New England States, their presence is seldom suspected, as this bird of dull plumage appears to avoid publicity by feeding in shaded places where the verdure is dense and mosquitoes abound.

The beautiful little nest, usually placed in a fork of an upright branch not more than five to ten feet above the ground, is made of vegetable fiber, stems, Indian hemp, and grass, lined with fine, round grass stems. Three and four cream-colored eggs, daintily speckled around the larger half with light red, are laid about the second week in June.

THE VERMILION FLYCATCHER *

Thickets along water-courses are favorite resorts of this beautiful flycatcher, which may be seen only on the southern border of the United States, south through Mexico to

Guatemala, where it is a common species. Mr. W. E. D. Scott notes it as a common species about Riverside, Tucson, and Florence, Arizona. Its habits are quite similar to those of other flycatchers, though it has not been so carefully observed as its many cousins in other parts of the country. During the nesting season the male frequently utters a twittering song while poised in the air, in the manner of the sparrow hawk, and during the song it snaps its bill as if catching insects.

The Vermilion's nest is usually placed in horizontal forks of rattan trees, and often in mesquites, not more than six feet from the ground; they are composed of small twigs and soft materials felted together, with the rims covered with lichens and the shallow cavity lined with a few horse or cow hairs. Dr. Merrill states that they bear considerable resemblance to nests of the wood pewee, in appearance and the manner in which they are saddled to the limb. Nests have been found, however, which lacked the exterior coating of lichens.

Three eggs are laid of a rich creamy-white, with a ring of large brown and lilac blotches at the larger end.

